

No. 133-4.

MAY AND JUNE, 1878.

Price 1s.

# HUMAN NATURE:

## A MONTHLY JOURNAL

OF

Zoistic Science, Intelligence, & Popular Anthropology,

EMBRACING

PHYSIOLOGY, PHRENOLOGY, PSYCHOLOGY,  
SPIRITUALISM,

PHILOSOPHY, THE LAWS OF HEALTH, AND SOCIOLOGY.

### CONTENTS.

Principles and Credentials of Anthropology.—Dr. Buchanan.  
Pre-Adamite Man; or, Was this World Peopled before the Advent of  
Adam, and if so, What became of the People living therein?—  
By J. J. Morse.

Essays on Matter, Motion, and Resistance—Light, continued. By  
Joseph Hands, M.R.C.S.

Brahminical Mystic Numbers.—The Papacy and Freemasonry.

Material Phenomena: *Apparitions*. The History of Alfonso.

Phenomenal Spiritualism. By John Wetherbee.

The Future Australian Race. By Marcus Clarke.

Chapters from the "Students' Manual of Magnetism (from the French  
of Baron du Potet.)—continued.

Remarks on Mind and Soul by J. Burns, at the Meeting of No. 1  
School, Order of Spiritual Teachers.

A Beautiful Test of Spirit-Presence through J. V. Mansfield.

Human Impersonality. By Epes Sargent.

Poetry.—The Heart of Man—From the German.

Seaside Scenes and Reflections. By James Lewis.

Health and Education.

LONDON:

JAMES BURNS, PROGRESSIVE LIBRARY.

15, SOUTHAMPTON ROW, BLOOMSBURY SQUARE, HOLBORN, W.C.



## ADVERTISEMENTS.

*HUMAN NATURE*, Vols. I., II., III., IV., V., VI., VII., VIII., IX., X. XI.,  
Bound in Cloth, 7s. 6d. each.

Annual Subscription, 7s. post-free; To America, 8s., or \$2 in Gold.

SUBSCRIBERS TO THE *MEDIUM* FOR 1877 ARE ENTITLED TO  
VOL. X. *HUMAN NATURE* FOR 1876 FOR 5s.

## THE "MEDIUM AND DAYBREAK:"

A Weekly Journal devoted to the History, Phenomena, Philosophy, and Teachings of Spiritualism. Published every Friday. Price 1½d.; Annual Subscription, 8s. 8d.

## REPORT ON SPIRITUALISM OF THE COMMITTEE OF THE LONDON DIALECTICAL SOCIETY

For One Penny (by the dozen)

Was published on November 16th, 1877, in a Special Number of the *Medium*, the whole of the General Report, Reports of Sub-Committees, and Minutes of Experiments of the celebrated Inquiry into Spiritualism of the Committee appointed by the London Dialectical Society. Single Copy, 1½d.; 8s. per 100, Carriage paid; or 1s. per dozen post-free. It is expected that 100,000 copies will be sold.

*Specimen Numbers of the MEDIUM for distribution sent to all parts  
of the world on application.*

*In One Handsome Volume, Demy 8vo, Bevelled Boards, Price 5s.*

SEERS OF THE AGES.—Embracing Spiritualism, Past and Present;  
Doctrines Stated, and Moral Tendencies Defined.

BY J. M. PEEBLES, M.D.

*Now Ready, in Neat Wrapper, 100 pp., price 1s.*

## Buddhism and Christianity Face to Face; or, an

Oral Discussion between the Rev. MIGETTUWATTE, a Buddhist Priest, and Rev. D. SILVA, an English Clergyman, held at Pan-tura, Ceylon; with an Introduction and Annotations by J. M. PEEBLES, M.D.

*In a Neat Wrapper, Price 6d.; Post-free, 6½d.*

CHRIST THE CORNER-STONE OF SPIRITUALISM. A TREATISE  
BY J. M. PEEBLES, M.D.

Discussing—"Talmudic Proof of Jesus' Existence." "The Distinction between Jesus and Christ." "The Moral Estimate that Leading American Spiritualists put upon Jesus of Nazareth." The "Commands, Marvels, and Spiritual Gifts of Jesus Christ." "The Philosophy of Salvation through Christ." "The Belief of Spiritualists and the Church of the future."

LONDON: J. BURNS, 15, SOUTHAMPTON ROW, W.C.



# HUMAN NATURE:

A Monthly Journal of Zoistic Science.

---

MAY AND JUNE, 1878.

---

## PRINCIPLES AND CREDENTIALS OF ANTHROPOLOGY.

[Though not a few of Dr. Buchanan's works found their way into this country years ago when they were in print, yet the present-day readers know but little of the grand achievements of this investigator. It is hoped that the following hasty summary will be read with interest and lead to a further statement of Dr. Buchanan's views and researches.]

The Science of the Brain, developed by Gall and Spurzheim under the title of Phrenology, became the subject of systematic investigation by Dr. Joseph Rhodes Buchanan in 1835. In this investigation, during the succeeding six years, he satisfied himself of its substantial truth, and of certain errors in its detail, which he endeavoured to correct by new observations, while at the same time he endeavoured to locate in the brain the elements of human character, which had been overlooked by Gall and Spurzheim, so as to complete a *systematic psychology*, which the phrenological system did not offer.

In addition to this he recognised the brain as the seat of physiological influences that affect the body, and endeavoured to ascertain its *physiological* as well as phrenological functions—in other words to develop a new science of Cerebral Physiology.

Having developed Cerebral Physiology and Phrenology by the Gallian method of cranioscopy, or comparison of heads, and believing this method an unsatisfactory basis for a positive science, which needs to rest upon exact experiment rather than probability or inference, he discovered in 1841, the art of exciting the organs of the living brain, so as to make them exercise and manifest their functions. This was followed by the discovery of Psychometry, which enables us to determine the mental influence or faculty connected with any portion of the brain, however small, and to verify this power by discovering any psychic influence in manuscript so as to describe its writer.

VOL. XII.

L

## ANTHROPOLOGY.

147

application to the analysis of the powers of life and ascertainment of their location; and the only question that can arise is not as to the reality of such sciences, but whether the discoverer, Dr. B., has been so correct and careful in his investigations, and so rational in their results as to be a safe and reliable guide in their exposition and application to useful purposes.

The grandeur and magnitude of such discoveries and their revolutionary influence on science and philosophy constitute no valid objection to their prompt reception by all *truly honest* inquirers, who have sufficient reasoning capacity to perceive that all rests upon the basic proposition that each convolution of the brain can be excited to the manifestation of its function—a proposition which is conceded by all who have become acquainted with Dr. Buchanan's demonstrations, which has never been controverted by any committee or class during the last thirty-five years, and which will henceforth be practically demonstrated in medical practice by Dr. Buchanan's pupils.

To those who have not the taste or leisure for experimental investigations, the seven sciences above mentioned are presented as a compact and harmonious system of science, much of which is so self-evident on first presentation, and the whole of which is so harmonious with itself and with all other knowledge, whether anatomical, physiological, pathological, or psychological, as to justify its reception upon the *apparent validity* of all its claims, and the thorough satisfaction which it gives to the rational and critical intellect.

That this Anthropology is not a speculative theory or a dream of fanciful enthusiasm but a demonstrable science, is shown by its cordial reception wherever it has been presented by Dr. Buchanan, from 1841 to the present time; Dr. B. having been at all times ready to court the critical examination of his discoveries.

Its first presentation to challenge scrutiny was before the Board of Trustees of the Medical College of the University of Louisville (1841-42) then the leading Medical College of the



After completing the exploration of the brain, the investigation of the body revealed the exact law of connection and correspondence between the soul and body. The sympathy of mind and body was shown to be a matter of exact science, and to this science was given the name, Sarcognomy.

In addition to these four sciences, certain experiments developed the laws of operation for the soul itself and its intercourse with the brain and body which constitute a science of Pneumatology.

In these five sciences, Dr. B. found certain common mathematical (geometrical) principles, which unite them all as one, giving them a remarkable simplicity of fundamental principles, and at the same time revealing the fundamental laws of expression in oratory and manners, the fine arts and the drama. These mathematical principles constitute the science of Pathognomy, which embraces of course the scientific principles of Physiognomy, which had never heretofore been discovered or presented by any author or teacher.

To these six sciences, which embrace chiefly the normal phenomena of man, it is necessary to add the science of the abnormal. *Pathological* phenomena or laws, with therapeutic methods being presented in Cerebral Physiology and Sarcognomy, there still remains a large department of knowledge embracing that abnormal action of the brain shown in insanity, idiocy, imbecility, melancholia, nostalgia, epilepsy, hypochondria, hysteria, catalepsy, trance, somnambulism, magnetic control and obsession; dipsomania, abstinence, loss of memory, loss of language, chronic headache, sleeplessness, paralysis, apoplexy, &c., which requires for its illustration a volume upon Cerebral Pathology or Insanity in its most comprehensive sense. Such a science arises necessarily from the experiments and discoveries of Dr. Buchanan, as he is able to produce upon the impressible temperament any of the above-named abnormal conditions, transforming the rational individual for the time being into a lunatic, and thus demonstrating the anatomical sources of insanity or brain disorder of every possible species.

The seven sciences:—1. Cerebral Physiology; 2. Cerebral Psychology or Phrenology; 3. Sarcognomy; 4. Psychometry; 5. Pneumatology; 6. Pathognomy; 7. *Cerebral Pathology*, result necessarily from the possibility of so experimenting on the brain as to determine the location of all the mental and physical powers of man, the discovery made by Dr. Buchanan in 1841. If this discovery be demonstrated, the seven sciences named, which constitute a complete Anthropology—the first system of science ever presented to mankind which could be called an Anthropology—are obvious and inevitable consequences of its

are in advance of the age. Those who only read and neither witness experiments nor make experiments themselves (at least nineteen out of twenty of them) can neither grasp nor fathom what you have laid before them. For years to come your pupils only, and those taught by them, will enjoy to any extent the benefit of your writings. The 'million' are far below and behind you."

Prof. Caldwell also indorsed the statement of Dr. Buchanan's discoveries, which was sent in 1842 to the phrenologists of Edinburgh.

About the same time Prof. J. K. Mitchell, perhaps the most eminent Professor of the Jefferson Medical College of Philadelphia, gave a still more substantial indorsement by repeating the experiments of Dr. Buchanan upon the head of Joseph Neal, the well-known editor of Philadelphia, which being published at the time made a considerable sensation. The record of Prof. Mitchell's experiments and localisation of the faculties was generally quite analogous to that of Dr. Buchanan.

During the ensuing two years a great many public repetitions of these experiments on the brain were made in the United States and Europe, but in most cases were made (contrary to the method of Dr. B.) in the mesmeric state, and were therefore of less scientific value. The English scientists, Gregory, Hall, and others who were interested in phreno-mesmerism were not guided by the simpler and more scientific methods of Dr. Buchanan, owing to the fact that his communication to the Edinburgh phrenologists, indorsed by Prof. Caldwell, instead of being published, was simply filed away as a caveat and never allowed to reach the scientists of England. Disgusted by the short-sighted conservatism of those whom he *supposed* the most advanced thinkers, and remembering the indifference of the English to Dr. Gall, Dr. Buchanan made no further effort to reach the English mind. Hence his experiments have not been introduced in Europe except in the bastard form of phreno-mesmerism, in which the brain is controlled by the will of the operator.



No. 133-4.

MAY AND JUNE, 1878.

Price 1s.

# HUMAN NATURE:

## A MONTHLY JOURNAL

OF

Eclectic Science, Intelligence, & Popular Anthropology,

EMBRACING

PHYSIOLOGY, PHRENOLOGY, PSYCHOLOGY,  
SPIRITUALISM,

PHILOSOPHY, THE LAWS OF HEALTH, AND SOCIOLOGY.

### CONTENTS.

Principles and Credentials of Anthropology.—Dr. Buchanan.  
Pre-Adamite Man; or, Was this World Peopled before the Advent of  
Adam, and if so, What became of the People living therein?—  
By J. J. Morse.  
Essays on Matter, Motion, and Resistance—Light, continued. By  
Joseph Hands, M.R.C.S.  
Brahminical Mystic Numbers.—The Papacy and Freemasonry.  
Material Phenomena: *Apparitions*. The History of Alfonso.  
Phenomenal Spiritualism. By John Wetherbee.  
The Future Australian Race. By Marcus Clarke.  
Chapters from the "Students' Manual of Magnetism (from the French  
of Baron du Potet.)—continued.  
Remarks on Mind and Soul by J. Burns, at the Meeting of No. 1  
School, Order of Spiritual Teachers.  
A Beautiful Test of Spirit-Presence through J. V. Mansfield.  
Human Impersonality. By Epes Sargent.  
Poetry.—The Heart of Man—From the German.  
Seaside Scenes and Reflections. By James Lewis.  
Health and Education.

LONDON:

JAMES BURNS, PROGRESSIVE LIBRARY.

15, SOUTHAMPTON ROW, BLOOMSBURY SQUARE, HOLBORN, W.C.



## ADVERTISEMENTS.

*HUMAN NATURE, Vols. I., II., III., IV., V., VI., VII., VIII., IX., X., XI.,  
Bound in Cloth, 7s. 6d. each.*

Annual Subscription, 7s. post-free; To America, 8s., or \$2 in Gold.

SUBSCRIBERS TO THE *MEDIUM* FOR 1877 ARE ENTITLED TO  
VOL. X. *HUMAN NATURE* FOR 1876 FOR 5s.

## THE "MEDIUM AND DAYBREAK:"

A Weekly Journal devoted to the History, Phenomena, Philosophy, and Teachings of Spiritualism. Published every Friday. Price 1½d.; Annual Subscription, 8s. 8d.

## REPORT ON SPIRITUALISM OF THE COMMITTEE OF THE LONDON DIALECTICAL SOCIETY

For One Penny (by the dozen)

Was published on November 16th, 1877, in a Special Number of the *Medium*, the whole of the General Report, Reports of Sub-Committees, and Minutes of Experiments of the celebrated Inquiry into Spiritualism of the Committee appointed by the London Dialectical Society. Single Copy, 1½d.; 8s. per 100, Carriage paid; or 1s. per dozen post-free. It is expected that 100,000 copies will be sold.

*Specimen Numbers of the MEDIUM for distribution sent to all parts  
of the world on application.*

*In One Handsome Volume, Demy 8vo, Bevelled Boards, Price 5s.*

SEERS OF THE AGES.—Embracing Spiritualism, Past and Present;  
Doctrines Stated, and Moral Tendencies Defined.

BY J. M. PEEBLES, M.D.

*Now Ready, in Neat Wrapper, 100 pp., price 1s.*

## Buddhism and Christianity Face to Face; or, an

Oral Discussion between the Rev. MIGETTUWATTE, a Buddhist Priest, and Rev. D. SILVA, an English Clergyman, held at Pan-tura, Ceylon; with an Introduction and Annotations by J. M. PEEBLES, M.D.

*In a Neat Wrapper, Price 6d.; Post-free, 6½d.*

CHRIST THE CORNER-STONE OF SPIRITUALISM. A TREATISE  
BY J. M. PEEBLES, M.D.

Discussing—"Talmudic Proof of Jesus' Existence." "The Distinction between Jesus and Christ." "The Moral Estimate that Leading American Spiritualists put upon Jesus of Nazareth." The "Commands, Marvels, and Spiritual Gifts of Jesus Christ." "The Philosophy of Salvation through Christ." "The Belief of Spiritualists and the Church of the future."

LONDON: J. BURNS, 15, SOUTHAMPTON ROW, W.C.



# HUMAN NATURE:

A Monthly Journal of Zoistic Science.

---

MAY AND JUNE, 1878.

---

## PRINCIPLES AND CREDENTIALS OF ANTHROPOLOGY.

[Though not a few of Dr. Buchanan's works found their way into this country years ago when they were in print, yet the present-day readers know but little of the grand achievements of this investigator. It is hoped that the following hasty summary will be read with interest and lead to a further statement of Dr. Buchanan's views and researches.]

The Science of the Brain, developed by Gall and Spurzheim under the title of Phrenology, became the subject of systematic investigation by Dr. Joseph Rhodes Buchanan in 1835. In this investigation, during the succeeding six years, he satisfied himself of its substantial truth, and of certain errors in its detail, which he endeavoured to correct by new observations, while at the same time he endeavoured to locate in the brain the elements of human character, which had been overlooked by Gall and Spurzheim, so as to complete a *systematic psychology*, which the phrenological system did not offer.

In addition to this he recognised the brain as the seat of physiological influences that affect the body, and endeavoured to ascertain its *physiological* as well as phrenological functions—in other words to develop a new science of Cerebral Physiology.

Having developed Cerebral Physiology and Phrenology by the Gallian method of cranioscopy, or comparison of heads, and believing this method an unsatisfactory basis for a positive science, which needs to rest upon exact experiment rather than probability or inference, he discovered in 1841, the art of exciting the organs of the living brain, so as to make them exercise and manifest their functions. This was followed by the discovery of Psychometry, which enables us to determine the mental influence or faculty connected with any portion of the brain, however small, and to verify this power by discovering any psychic influence in manuscript so as to describe its writer.



After completing the exploration of the brain, the investigation of the body revealed the exact law of connection and correspondence between the soul and body. The sympathy of mind and body was shown to be a matter of exact science, and to this science was given the name, Sarcognomy.

In addition to these four sciences, certain experiments developed the laws of operation for the soul itself and its intercourse with the brain and body which constitute a science of Pneumatology.

In these five sciences, Dr. B. found certain common mathematical (geometrical) principles, which unite them all as one, giving them a remarkable simplicity of fundamental principles, and at the same time revealing the fundamental laws of expression in oratory and manners, the fine arts and the drama. These mathematical principles constitute the science of Pathognomy, which embraces of course the scientific principles of Physiognomy, which had never heretofore been discovered or presented by any author or teacher.

To these six sciences, which embrace chiefly the normal phenomena of man, it is necessary to add the science of the abnormal. *Pathological* phenomena or laws, with therapeutic methods being presented in Cerebral Physiology and Sarcognomy, there still remains a large department of knowledge embracing that abnormal action of the brain shown in insanity, idiocy, imbecility, melancholia, nostalgia, epilepsy, hypochondria, hysteria, catalepsy, trance, somnambulism, magnetic control and obsession, dipsomania, abstinence, loss of memory, loss of language, chronic headache, sleeplessness, paralysis, apoplexy, &c., which requires for its illustration a volume upon Cerebral Pathology or Insanity in its most comprehensive sense. Such a science arises necessarily from the experiments and discoveries of Dr. Buchanan, as he is able to produce upon the impressible temperament any of the above-named abnormal conditions, transforming the rational individual for the time being into a lunatic, and thus demonstrating the anatomical sources of insanity or brain disorder of every possible species.

The seven sciences:—1. Cerebral Physiology; 2. Cerebral Psychology or Phrenology; 3. Sarcognomy; 4. Psychometry; 5. Pneumatology; 6. Pathognomy; 7. *Cerebral Pathology*, result necessarily from the possibility of so experimenting on the brain as to determine the location of all the mental and physical powers of man, the discovery made by Dr. Buchanan in 1841. If this discovery be demonstrated, the seven sciences named, which constitute a complete Anthropology—the first system of science ever presented to mankind which could be called an Anthropology—are obvious and inevitable consequences of its



application to the analysis of the powers of life and ascertainment of their location; and the only question that can arise is not as to the reality of such sciences, but whether the discoverer, Dr. B., has been so correct and careful in his investigations, and so rational in their results as to be a safe and reliable guide in their exposition and application to useful purposes.

The grandeur and magnitude of such discoveries and their revolutionary influence on science and philosophy constitute no valid objection to their prompt reception by all *truly honest* inquirers, who have sufficient reasoning capacity to perceive that all rests upon the basic proposition that each convolution of the brain can be excited to the manifestation of its function—a proposition which is conceded by all who have become acquainted with Dr. Buchanan's demonstrations, which has never been controverted by any committee or class during the last thirty-five years, and which will henceforth be practically demonstrated in medical practice by Dr. Buchanan's pupils.

To those who have not the taste or leisure for experimental investigations, the seven sciences above mentioned are presented as a compact and harmonious system of science, much of which is so self-evident on first presentation, and the whole of which is so harmonious with itself and with all other knowledge, whether anatomical, physiological, pathological, or psychological, as to justify its reception upon the *apparent validity* of all its claims, and the thorough satisfaction which it gives to the rational and critical intellect.

That this Anthropology is not a speculative theory or a dream of fanciful enthusiasm but a demonstrable science, is shown by its cordial reception wherever it has been presented by Dr. Buchanan, from 1841 to the present time; Dr. B. having been at all times ready to court the critical examination of his discoveries.

Its first presentation to challenge scrutiny was before the Board of Trustees of the Medical College of the University of Louisville (1841-42) then the leading Medical College of the West, which resulted in the appointment of three of the Faculty as a committee to investigate and report. Profs. Cooke and Cobb, from non-acquaintance with the subject, declined to act, but Prof. Caldwell, the most learned and distinguished member of the Faculty, to whose department this subject properly belonged, gave it his attention at various times and prepared finally a report in which he embraced this subject, which would have been presented to the American Medical Association but for his death in 1853. The conclusions of this most learned and eloquent scientist may be inferred from a letter to Dr. Buchanan published in 1850, in which he said: "At present, however, you



are in advance of the age. Those who only read and neither witness experiments nor make experiments themselves (at least nineteen out of twenty of them) can neither grasp nor fathom what you have laid before them. For years to come your pupils only, and those taught by them, will enjoy to any extent the benefit of your writings. The 'million' are far below and behind you."

Prof. Caldwell also indorsed the statement of Dr. Buchanan's discoveries, which was sent in 1842 to the phrenologists of Edinburgh.

About the same time Prof. J. K. Mitchell, perhaps the most eminent Professor of the Jefferson Medical College of Philadelphia, gave a still more substantial indorsement by repeating the experiments of Dr. Buchanan upon the head of Joseph Neal, the well-known editor of Philadelphia, which being published at the time made a considerable sensation. The record of Prof. Mitchell's experiments and localisation of the faculties was generally quite analogous to that of Dr. Buchanan.

During the ensuing two years a great many public repetitions of these experiments on the brain were made in the United States and Europe, but in most cases were made (contrary to the method of Dr. B.) in the mesmeric state, and were therefore of less scientific value. The English scientists, Gregory, Hall, and others who were interested in phreno-mesmerism were not guided by the simpler and more scientific methods of Dr. Buchanan, owing to the fact that his communication to the Edinburgh phrenologists, indorsed by Prof. Caldwell, instead of being published, was simply filed away as a caveat and never allowed to reach the scientists of England. Disgusted by the short-sighted conservatism of those whom he *supposed* the most advanced thinkers, and remembering the indifference of the English to Dr. Gall, Dr. Buchanan made no further effort to reach the English mind. Hence his experiments have not been introduced in Europe except in the bastard form of phreno-mesmerism, in which the results, being controlled by the will of the operator, have little scientific value.

Being invited to lecture at New Harmony, where the families of Owen, McClure, Say, and others made an intellectual group, the lectures and experiments were considered so very wonderful that a letter of Hon. Robert Dale Owen (June, 1842), was published in the *New York Evening Post*, giving in five columns a very interesting account of what he had witnessed.

"These experiments," said Mr. Owen, "chiefly refer to the vital powers and mental functions of the human subject and in an earlier and darker age of the world would have obtained for their author not the character of a bold original philosophic na-



turalist, but rather the reputation of some Paduan necromancer, casting his cabalistic spells over the minds and bodies of his victims."

Omitting these marvellous operations on the mind, described by Mr. Owen, we give only his report of physical effects :

"Experiments made while Dr. M., of our town, held his finger on the pulse, showed that by excitement of different portions of the brain, almost any description of pulse could be produced—hard, soft, full, wiry, quick, or slow. At one time the pulsations of the heart were so much reduced as to be hardly perceptible to the hand ; at another the pulse bounded as under the influence of sudden passion, and again at another it indicated violent febrile action in several of its stages.

"Several experiments were made on T. C., in the presence of two medical gentlemen, above referred to, by acting alternately on the organs of calorification and coolness. A thermometer was introduced into his mouth, which showed the temperature to be 98°. *In one minute and fifteen seconds it was reduced to 92° ; in one minute and thirty-five seconds more it was raised to 98° ; in two minutes and a half more between 99° and 100° ; and again in one minute and forty seconds from that time, it was sunk to 91°*, when it was found necessary to discontinue the experiment, as the patient's teeth began to chatter, and he was unable to retain the thermometer longer in his mouth."

"It behoves us," says Mr. Owen in conclusion, "first, by repeated experiments, to see established, to the satisfaction of the public mind, the actual existence of phenomena so novel and so startling as those I have just described, before we go in search of the thousand results and deductions—physical, moral, social and medical—and the ten thousand corollaries therefrom which even at the first rise of the curtain upon such a scene of wonders throng confusedly on our minds. Nor, except for a brief season, can doubts remain as to the reality or non-existence of the phenomena here detailed. Dr. Buchanan is about to visit the Atlantic cities. His pretensions will pass through the fiery ordeal which science and talent are sure to prepare for them. They will quickly be exploded and pass to oblivion among the thousand day-dreams that have amused all ages of the world, or they will be recorded on a page of science one of *the most luminous in all her splendid volume*, and the discovery of Buchanan will hereafter rank not with those of Gall and Spurzheim alone, but hardly second to that of any philosopher or philanthropist who ever devoted his life to the cause of science and the benefit of the human race."

Soon after the visit to New Harmony a number of experiments were made by Dr. B. before the Phreno-Magnetic Society of



Cincinnati, attended by the most eminent citizens—Judges McLean, Rowan, and Walker, Bishop Purcell, Prof. Matthews, Drs. Marshall, Bonner, Latta, and many others. Mr. Valentine, a gentleman of large brain and highly impressible temperament, was operated on with very prompt results. In one of the experiments, alimentiveness being strongly excited, Mr. V., rather than wait for the arrival of food, commenced eating a tallow candle.

The experiments on the pulse, as published in the Journal of the Society, were reported as follows :

Dr. B. then proceeded to some experiments upon the pulse, Drs Bonner and Latta being placed one on each side of Mr. V. in order to observe the state of the pulse previous to the experiment, and the changes that might occur during its progress. Before commencing, the pulse was observed to beat 72 in a minute, and to be full, soft, and easily compressed. The head was then touched on various parts of the frontal and occipital regions, and as the hand of the operator passed from front to back and from back to front, the character of the pulse rapidly passed through every change of quality from full, soft, and compressible, to tense, wiry, and diminished volume, irritable and irregular, being also much diminished in velocity in the one case, and accelerated in the other ; sometimes beating only sixty and then in a minute or two increasing to eighty. These experiments were very marked and decisive in their results.

During the whole course of these experiments on the pulse, the physicians who observed and reported the results sat with their backs to the operator, and one of them requested him not to name the parts of the head touched in succession. In this situation of things, the changes of the pulse were announced, and were observed to follow quickly the change of the position of the operator's hand ; the soft, full, slow pulse corresponding to the excitement of the frontal region ; and the quick, thin, wiry, and irritable pulse that of the occipital and basilar regions. The change of pulse usually became evident to the physicians in about one minute from the time when the hand was transferred to a different region, and each spot that was touched invariably produced the same effect when excited the second or third time as when manifested at first.

In the winter of 1842-3 the science was publicly presented by Dr. B. in New York and investigation sought. A committee of investigation was appointed at a public meeting at Clinton Hall, which committee being inconveniently large, delegated its functions to a sub-committee of four, consisting of Dr. Samuel Forry, Hon. J. L. O'Sullivan, William Cullen Bryant, the well-known poet and editor of the *Evening Post*, and Rev. H. W. Bellows, whose absence from the city prevented his participation. Before this committee Dr. Buchanan made a number of experimental demonstrations,—not so many, for want of time, as he and the



committee desired, but enough to impress their minds with the reality of his discoveries and to secure a favourable report, which was issued in an extra edition of the *Evening Post*, December 6th, detailing a number of the experiments and concluding with the statement that

"They have had sufficient evidence to satisfy them that Dr. Buchanan's views have a rational experimental foundation, and that the subject opens a field of investigation second to no other in immediate interest, and in promise of important future results to science and to humanity."

The ably edited *Democratic Review*, at that time the leading monthly magazine of New York, gave an interesting sketch of the whole subject, in which the following editorial language was used :

"To Dr. Buchanan is due the distinguished honour of being the *first individual* to excite the organs of the brain by agencies applied externally directly over them, before which the discoveries of Gall, Spurzheim, or Sir Charles Bell—men who have justly been regarded as benefactors of their race—dwindle into comparative insignificance. This important discovery has given a key to man's nature, moral, intellectual, and physical, for by this means, in 'impressible' subjects, have become discoverable the various cerebral organs which are not only connected with the phenomena of thought and feeling, but control the corporeal functions. . . . He has likewise clearly established the general truths of phrenology, corrected many errors of detail, and developed the subject with such a degree of minuteness that it now may be said to resemble the full grown adult as compared with the child."

In addition to the experiments before the committee from the public meeting, experiments of a precise physiological character were made before a medical committee consisting of Drs. Forry, Griscom, Joslin, and Mitchell, which were published in the *Boston Medical and Surgical Journal*, in January, 1843. In these experiments (the full report of which would be too much for this brief statement), Dr. B. showed his ability to change the visual power of either eye by operating on the opposite side of the head, to increase or diminish the strength of the muscles and of the pulse by operating upon the brain, and to play upon the passions through the several organs—the subject of one of the experiments having been made temporarily insane.

At the same time the principles of the science were illustrated before a private class of thirty persons, who, at the close of the course, published an "Address to the Friends of Science," in which they said that their "positions in relation to the experiments were such as to admit of the closest scrutiny. And all



questions of doubt or difficulty arising in the minds of any, having been put with freedom and answered with promptitude, we feel that no witnesses could have better opportunity for knowing the genuineness of all experiments tried in their presence. Many of us have tried the experiments in our own private circles with success, and thus confirmed what we had previously observed; and several have had not only the evidence but actual experience of the excitability of the organs by *feeling the effects in their own persons.*" The address says in conclusion: "For these discoveries we tender our gratitude to Dr. Buchanan, and doubt not that an intelligent and generous public will fully appreciate their importance, and not, as has happened in other cases, leave this act of justice to be performed by posterity."

The science was next presented in Boston. The same approbation was expressed by the members of the class in attendance, of whom the Rev. John Pierpoint publicly remarked that "he had seen enough to know that there was in this new doctrine a new science of which he wished to learn more." "The phrenological system was the best system of philosophy he had ever found. This science was an improvement upon that. Formerly we had but the outlines of the new continent, but you, sir (turning to Dr. Buchanan), have sailed in and explored it, and pointed out its features."

A complete demonstration of the principles of Anthropology by experimenting on the mental and physiological organs of the brain, was made before a medical committee consisting of Drs. Ingalls, Bowditch, Flint, Gray, Crane, Lane, Homans, Cole, and Dorr. In these experiments (which the committee reported in the *Boston Post*, April 27, 1843, with an expression of their satisfaction), the pulse was controlled through the brain, and the organs of somnolence, disease, health, liberality, acquisitiveness, destructiveness, alimentiveness, philanthropy, relaxation, mirthfulness, religion, combativeness, love, and vision were excited in different persons, the best experiments being made upon Dr. Lane, a member of the committee.

A few months later the faculty of Indiana State University, at Bloomington (Dr. Wylie, President), made an extensive and complimentary report of about fifty pages upon the lectures and experiments of Dr. B., in which a large number of experiments were detailed. The 37th page of the report, after reciting the experiments upon the nervaura, says:

"Such were the facts which we have witnessed, not as a mere matter of amusement, to prove that such things can be done, and to excite wonder, but as illustrations of the most startling discovery that has ever been made in the science of man, the consequences of which are too extensive to be foreseen."



One of the experiments at the laboratory described by the professor of chemistry, was upon a lady who, when the organ of sensibility was excited, was affected convulsively in the arms by the mere contact of fragments of copper and zinc, scarcely the 16th of a square inch in area, yet who, when her hardihood was excited, took the shock from a battery of nearly two hundred plates (others could not bear over fifty), and was amused at her own insensibility.

The report expresses, in conclusion, a deep sense of the importance of the science—

“Which develops the rudimentary system of phrenology into a perfect and profound science, which explains the phenomena of animal magnetism, and which renders intelligible those things in physiology, disease, and insanity which have heretofore been entirely inexplicable. To the good sense and fairness of the public we appeal, and trust that, although our story may resemble the legends of romance or necromancy in the great powers that have been displayed over the human mind, its wonderful character will subserve its chief aim and end to induce those who are interested in the science of man, in education, and moral philosophy, to make these subjects a matter of experimental inquiry as well as speculation.” Signed by Rev. Dr. Andrew Wylie, president, the professors of the University, the principal of the county seminary, and two physicians of Bloomington.

In the next visit of Dr. Buchanan to Boston, the interest extended; a number of experiments on the brain were published in the newspapers. His class addressed the public, stating the wonderful experiments they had witnessed, and saying, “Perfect freedom was allowed in making inquiries, seeking explanations, and approaching the subject of each experiment, and with eyes and ears constantly on the alert every operation could be seen and every result minutely and cautiously investigated. In justice to Dr. Buchanan, we would remark that his beautiful and original doctrines were presented in a lucid and dignified style. His language was appropriate, his manner calm, and his illustrations often fascinating by their eloquence. We were impressed with his disinterested devotion to the cause of truth. We have been richly entertained by these lectures. The science has been modestly and learnedly presented. The facts we witnessed were of a startling and decided character.”

As experiments producing involuntary physical effects are more impressive to the scientific mind than those which affect the mental character, we quote from the *Louisville Democrat* a reference to Dr. Buchanan's lecture at the medical college in January, 1845:

Dr. Buchanan's lecture upon the circulation of the blood was



attended by a respectable audience, notwithstanding the very unfavourable weather. Several experiments were made upon the pulse, which were entirely successful and satisfactory. . . . The lecture being concluded, several came forward to undergo experiments upon the circulation. From among them, Mr. J., a student of the Institute, was selected as the subject of experiment. Dr. B. operated upon his head in the usual manner, and produced considerable bodily debility. The pulse was examined while Dr. B. was operating, and found to be small and soft. He changed the position of his hands upon the head and rendered the pulse full and firm. He next proposed that he could render the pulse more tense and resisting. In a few moments he produced this effect. He proceeded next to relax it and reduce the strength of the circulation; this he accomplished in a few minutes very fully, and finally restored the pulse to a natural and healthy state. The experiment of debilitating the circulation, produced, as Dr. B. predicted, some degree of sickness, which was removed by the last experiment.

The lectures of 1845 and 1846 elicited the same unanimous indorsement and applause as those of previous years. The expression of a class embracing leading citizens of Cincinnati (Gano, Piatt, &c.), was

*"Resolved, That the brilliant discoveries demonstrated by Dr. Buchanan, open a vast field of science, and have already in his hands given rise to the most satisfactory views of the mental and physical constitution of man."*

The report signed by the Hon. F. P. Stanton and others in behalf of the class at Memphis, embraces the following specification of the demonstrative experiments:

In demonstrating these unique doctrines by experiment upon the brain and body, Dr. B. has selected his subjects of experiment from the most intelligent and respectable of our citizens, of whom some twenty or more have manifested distinctly an impressible constitution, susceptible of demonstrative experiments. These experiments made upon these persons privately or before his class, were not only distinct and successful to their apprehension, but were witnessed by the class collectively, or by some of ourselves separately; and it may be remarked, that in all cases, both the persons experimented upon, and the persons who witnessed the experiments, were truly incredulous as to the possibility of such experiments being made upon any human being, but especially upon those whose intelligence, strength of character, and slowness of belief seemed to forbid any successful experiments upon them.

Among these experiments which have been witnessed, either by different members of the class or by the class collectively, may be mentioned the production of grief, even to the shedding of tears, when the natural disposition was entirely gay and mirthful up to the moment when the brain was thus affected; the production of decided anger; the production of mirth and of sadness; the excitement of



firmness, of pride, and of humility or reverence, to such an extent as to produce a submissive kneeling before the operator. These results, produced in persons entirely unacquainted with the system of Dr. Buchanan, without any preparation or mesmeric excitement, being perfectly awake, and conscious of what they were about, leave it beyond a doubt that he has discovered a wonderful susceptibility in the human brain, and that he has opened a path of investigation which, if cautiously and patiently pursued, must lead to the most important and wonderful results. As to the physiological part of his system, Dr. B. has displayed phenomena of an important and satisfactory character. He seems to have complete power over the circulation of the blood, producing any desired state of the pulse by his operations on the various organs of the brain. He has increased or diminished the activity and power of the muscular system, the brain, the respiratory and digestive organs. In short, he seems to have established the existence of physiological sympathies between the various parts of the brain and corresponding parts of the body, the knowledge of which must hereafter become as *useful* as it is now interesting and surprising.

These experiments were wonderful indeed, but are too well established by repetition to admit of a doubt. Other experiments, of a still more wonderful character, and tending to display strange, incredible powers of the human mind, have been repeated, under various circumstances, upon our most intelligent citizens.

The leading citizens and officials of the State Government, at Jackson, Mississippi, after attending a course by Dr. Buchanan, in June, 1846, published a report on the subject, describing many experiments. Their opinions on the subject (being from gentlemen of the highest rank in the legal and medical professions), are worth quoting:

We feel no hesitation in saying that Dr. B. has opened a great highway to the philosophy of man, and we see nothing to obstruct the progress of further discovery. The system of phrenology which he has already developed is one of vast extent, and supplies the innumerable defects of the system of Dr. Gall. In his application of the new system we have witnessed a delicate analysis of character and an accuracy in pointing out the peculiar phrenological and physiological developments of different individuals which might alone be regarded as a sufficient proof of the correctness of the theory. In a class of forty gentlemen, we have seen Dr. B. determine, by a glance at their heads, the structure, the physiological action, and the peculiarities of the lungs in each individual; stating with a precision, to which every man gave his assent, their different powers of respiration, their tones of conversation, and their respective peculiarities of delivery, both in common conversation and in public speaking. The science is, therefore, one of practical utility. It enables the student to determine readily the peculiarities of each man's bodily constitution, as well as the constitution of his mind. To the practitioner of medicine such a power over the human system must be of incalculable value.



The singular relations which Dr. B. has traced between the action of the mind, and the physiological movements in the body, the circulation of the blood, the secretions, and muscular action, have that simplicity and grandeur which are found in all the laws of nature when fully understood.

The science of phrenology has been objected to by some on the ground that it led to *materialism*, and was therefore in hostility to the spiritual doctrines of the Church. Dr. Buchanan's experiments entirely dissipate this objection.

A system of philosophy in which there is so much of elevation, so much of spiritual beauty—so much that is gratifying to our moral and religious sentiments, and, at the same time, so much of practical utility to all mankind, cannot but excite the most deep and abiding interest. It is but justice to Dr. Buchanan to say that he advances no views and urges no doctrine which he does not *fully sustain by experiment*.

From 1846 to 1856 the lectures of Prof. Buchanan were chiefly confined to the Medical School at Cincinnati, which attracted the largest medical classes in the city, and efficiently upheld liberalism and toleration in medicine—the Eclectic Medical Institute. In this institution, six of his colleagues, of distinguished ability, verified and sustained his discoveries, and the pupils of the Institute, many of whom have since earned distinction, sustained most cordially the truths that he presented, which they often verified by their own experiments.

The language used by the class in 1849-50, of which Prof. Warriner was chairman, is a fair representative of the sentiments felt and expressed by large classes during the ten years of Prof. Buchanan's service, from 1846 to 1856. The following extracts give their estimate of Anthropology:

"While, therefore, we gratefully accord distinguished honour to the labours of Dr. Gall and his coadjutors, we do at the same time regard the contributions which have been made to Anthropology by Dr. Buchanan as far exceeding those of his predecessors. Direct experiments after the neurological method on the uninjured brain of the waking conscious subject, compelling a display of its powers, can alone develop fully the functions of this noblest organ. By this means facts in physiology apparently discordant are readily harmonised, and laws previously unknown are clearly exhibited."

"Many of us, at the commencement of this series of lectures, were sceptical as to the impressibility of the subject in the waking state; but we take pleasure in announcing that the remotest doubt is now dispelled. We have seen the subject deprived of muscular power; we have witnessed a great increase of his strength; we have seen any faculty of the mind heightened or subdued at pleasure; we have personally performed many of



the experiments set forth in the "Journal of Man," and can testify, as can many in this city who have witnessed our experiments in private circles, that the half has not yet been published to the world."

During these ten years, while acting as Professor of Physiology and Institutes of Medicine, besides editing the *Medical Journal* and acting for six years as Dean of the Faculty, Prof. Buchanan issued five volumes of "Buchanan's Journal of Man," and published a condensed "System of Anthropology," in four hundred pages, presenting in a very concise manner phrenology, cerebral physiology, pathognomy, and sarcognomy, each of which sciences needed a larger volume to do it justice. These subjects were presented as they were first developed in his experiments and lectures in 1842. As it was developed then, this science or group of sciences has now been thirty-five years before the public; but as the edition of two thousand copies was speedily exhausted, and has for over twenty years been inaccessible to purchasers (the owners of copies being unwilling to part with so rare and peculiar a work), it is almost unknown to the men of the present generation.

By those who had some knowledge of the subject and the experiments of the author, this volume was received as an authentic and truthful exposition of Anthropology, destined to originate a new era in philosophy. The following expressions are a portion of the language of the press at the time. That of Dr. Buchanan's pupils was much more enthusiastic:

"Having been a student of phrenology for twenty years, and having made a critical acquaintance with the comparative merits of this most interesting science as developed by Gall, modified by Spurzheim, and still further modified by Buchanan, we feel competent to pronounce both as to the value of phrenology in general and the changes made by Dr. Buchanan in particular. And we have no hesitation in asserting the *great superiority* of the form in which it is presented by Dr. Buchanan, whether we regard its practical accuracy or its philosophical excellence."—*American Magazine of Homœopathy*.

"The book before us is certainly indicative of great ability and industry no less than of sincerity on the part of the author."—*North American Review*.

"Buchanan's 'Anthropology' is the first thing we have seen since the death of Gall and Spurzheim which evinces a capacity for undertaking the completion of their unfinished work. . . . But perhaps we have said enough to show that a new teacher, a profound thinker, is addressing the age, and is destined to make a profound impression, if not upon all his cotemporaries, at least upon the foremost thinkers of the time."—*Scalpel*.



"Beyond all doubt it is a most extraordinary work, exhibiting the working of a mind of no common stamp. Close students and hard thinkers will find it a rich treat—a deep and rich mine of thought."—*Gospel Herald*, Cincinnati.

"The author has long been known as a distinguished professor of physiology, whose name is identified with one of the most remarkable discoveries of the age—the impressibility of the brain. . . . We are confident Buchanan's *Anthropology* will soon supersede the fragmentary systems of Gall and Spurzheim, the metaphysicians and phrenologists."—*Cincinnati Daily Times*.

Buchanan's "*Journal of Man*," devoted to the same philosophy, was received by its readers and by the press generally in the most cordial and eulogistic manner, showing that the truths which it advocated were cordially appreciated. A few expressions are here quoted to show the estimate of literary critics :

His method is strictly scientific ; he proceeds on the pure ground of observation and experiment ; he admits no phenomenon as reality which he has not thoroughly tested, and is evidently more desirous to arrive at a correct understanding of nature than to establish a system. . . . We rejoice that they are in the hands of one who is so well qualified as the editor of the *Journal* to do them justice, both by his indomitable spirit of research, his cautious analysis of facts, and his power of exact and vigorous expression.—*New York Tribune*.

Many of its articles evince marked ability and striking originality.—*National Era*.

It is truly refreshing to take up this monthly. . . . When we drop anchor, and sit down and commune with philosophy as taught by Buchanan, the fogs and mists of the day clear up.—*Capital City Fact*.

One cannot help admiring the freshness of thought which this journal presents.—*New Era*, Boston.

In our humble opinion there does not live in this country a more profound and original thinker than Prof. Buchanan.—*Memph. Express*.

Probably no man living has paid so much attention to the investigation of the nervous system as Prof. Buchanan. He has cast more light upon mental philosophy than all the metaphysicians combined, from the days of Aristotle down to Upham, of our time.—*Plain Dealer*, Iowa.

This work is a pioneer in the progress of science.—*Louisville Democrat*.

It possesses more originality than any other work with which we are acquainted.—*Wellsville Herald*.

More of new, varied, and useful information, in relation to man's physical and mental constitution can be obtained from this work, than from any with which we are acquainted.—*Toledo Republican*.



During the past twenty years, Prof. Buchanan, for personal reasons, has been unwilling to undertake the very laborious task of propagandism in behalf of this new philosophy, which, being more novel and bolder in its claims than anything which has ever been presented to the scientific world—involving as it does a new departure and a thorough revolution in philosophy, in medicine, and in sociology, as well as in the philosophy of art and education—must necessarily, like all preceding important movements in science, encounter all the organized inertia of mankind, and the probable hostility of the pragmatic and bigoted, the irrational and the uncandid.

He believes, however, that the progress of the public mind during the thirty-six years since the announcement of his fundamental discovery, has produced a more candid and liberal style of thought, more ready to do justice to any sincere and intelligent investigation, and to accept honestly a *scientific demonstration* of any new truth.

His demonstration now embraces not merely the scientific exposition of the functions of the brain by experiment, but the application of the new principles to the philosophy and practice of medicine (as a Professor of the Institutes of Medicine), not merely in making pathology and therapeutics philosophic, but in showing how a large amount of disease may be treated absolutely without medicine, by controlling the nervous system, and how the great power of electricity, which is often used blindly and without scientific principles, may be applied by his pupils according to the exact laws of sarcognomy, with results heretofore unattainable. Medical and non-medical pupils will be instructed in the treatment of disease on the principles of sarcognomy (as taught in his collegiate lectures), so that *every cure of disease thus effected will be a practical demonstration of the physiological laws of sarcognomy, which render such cures possible by the new methods*—methods which bring relief to invalids upon whom drug medication has produced unsatisfactory results, and electric treatment has been insufficient for want of correct guidance.

Fortunately, the demonstration of Anthropology as a science does not absolutely require the numerous and delicate experiments by which Dr. Buchanan, over thirty years ago, enforced its claims upon all who approached him. As the discoveries of Galileo rested for verification upon his telescope, so do the discoveries of Anthropology rely for verification upon its exploring instrument in psychometry, an art and science now extensively practised and easily illustrated. It was of this discovery that the Rev. John Pierpoint spoke, in his poem on Progress at the 150th anniversary of Yale.



But much DAGUERRE as has thy genius done  
 In educating thus Latona's son,  
 In thus educating in the God of Light  
 The power to paint so at a single sight,  
 BUCHANAN has transcended thee as far  
 As the sun's face outshines the polar star.  
 Thine *art* can catch and keep what meets the eye—  
 His *science* subjects that far deeper lie.  
 Thy skill shows up the face, the outward whole—  
 His science measures and reveals the soul,  
 Thy subjects must be present—his may be  
 Sunk in the depths of the mysterious sea.  
 Their bodies may have mouldered into dust,  
 Their spirits long have mingled with the just  
 Made perfect. Yet if one has left behind  
 A written page whereon the mind  
 Has been poured out through pencil, paint, or pen,  
 That written page shall summon back again  
 The writer's spirit; pressed upon the brow  
 Or by the hand of many living now,  
 It shall the writer's character disclose—  
 His powers, his weaknesses, his joys, his woes,  
 The manly air, the sycophantic smile,  
 The patriot's valour and the traitor's wile.  
 MYSTERIOUS SCIENCE! that has now displayed  
 "How fearfully and wonderfully made"  
 Is man, that e'en his touch can catch the mind  
 That long has left material things behind!  
 Fearful the thought that when my clay is cold  
 And the next Jubilee has o'er it rolled,  
 The very page that I am tracing now,  
 With tardy fingers and a careworn brow,  
 To other brows, by other fingers pressed,  
 Shall tell the world not what I had been deemed,  
 Nor what I passed for, nor what I had seemed,  
 But what I *was*! Believe it, friends, or not,  
 To this high point of *progress* have we got,  
 We stamp ourselves on every page we write!  
 Send you a note to China or the Pole,  
 Where'er the wind blows or the waters roll—  
 That note conveys the measure of your soul!

A science so simply and pleasantly demonstrable, so fascinating to the student, so unlimited in its beneficent tendencies, and presented in all possible simplicity and sincerity, may justly claim the candid attention of *all* who think for themselves, and the cordial co-operation of every philanthropist with its author in realising its beneficence.

But whether the cultivated mind of our country be candid and liberal, or the reverse, he feels compelled by a sense of duty



not to be neglected, to devote the remnant of his life, though humbly conscious of his great inadequacy to the mighty task, to bringing the great and revolutionary truths of a new philosophy for physiology, pathology, and therapeutics, for education, sociology, ethics, and art—positive and practical in its physical basis, while beneficent and divine in its highest scope—within the reach of all who love the truth, and especially within the reach of the nobler souls who would live up to its requirements, and extend its beneficent power to all mankind.

### PRE-ADAMITE MAN ;

OR,

WAS THIS WORLD PEOPLED BEFORE THE ADVENT OF ADAM,

AND IF SO,

WHAT BECAME OF THE PEOPLE LIVING THEREIN ?

A Lecture delivered by J. J. MORSE, when in the Trance State,  
at Cardiff.

Much of the argument in this lecture, delivered on the evening of the 14th March, trenched upon the ground traversed in the lecture of the previous evening, and reported in the *Medium*, May 10.

The latter part of the question might be speedily answered. If there were men and women living in this world prior to Adam, their spirits went to the spirit-world, and their bodies to the dust of the earth, of necessity.

With reference to the main question, the existence of pre-Adamite man, the theological chronology of six thousand years was first criticised. A thousand years was all too brief a period for any nation to commence to climb the hill of civilisation, attain its summit, and then decline and be forgotten. Not to speak of the eighteen hundred years and more that had been consumed in the rise and progress of the British nation, think of Egypt, India, Persia, and China, besides the races of other climes, with their long roll of years stretching away backward into the very mists of time, and being lost in a hoary grey antiquity. Picture the mighty empires of the East, and it would be seen that thousands of years would be required for the evolution of a nation from barbarism, for its attainment to civilisation, for its enjoyment of that civilisation when attained, and for its declension and downward march. Visit other lands ; read the records carved on the rocks, found in the caves, stored in the temples, entombed in the literature, of India, and see if those records can be made to stand up and attest that one little period of six thousand years was sufficient to create them, and bequeath them a legacy to posterity. Take China, with records extending back unbroken for some twenty thousand years.



Take Persia, running back again into the night of time; take all the eastern lands, and the more modern-time countries of Spain and Gaul, and there were to be found records of human energy, of intellectual and scientific activity of certain kinds and phases, of philosophical speculation among the cultured portions of the people, that would be little short of miraculous if the paltry six thousand years of the Jewish chronology was sufficient to account for their existence and unfoldment.

If we looked at the Adamic man, what did he know? Absolutely nothing; for the possession of knowledge without having gained it by reading, or by practical experience, was an anomaly beyond comprehension. Adam, therefore, might have been as innocent as the flowers in May, Eve as pure as lilies floating on the bosom of the placid lake, but both were exceedingly ignorant of all practical knowledge in the matter of science, philosophy, religion, or experience of any kind. But supposing Adam to have been a proficient in mechanics, mathematics, social science, political economy; in religious philosophy, in philosophy apart from religion, in all the arts and sciences; and Eve to have been endowed with all the domestic virtues and capabilities, every element of greatness that subsequently appeared upon the stage of the world's history,—supposing all this,—Adam and Eve could not have made the empire of India in a day, founded the empire of Persia in a week, laid the foundation of Egyptian greatness in a month, sent China on her way by the wave of one hand, and with the other scattered all the less famous nations of antiquity over the face of the globe. If Adam and Eve were the first people who lived in this world, since they could hardly rear more than some twenty children at the outside to help them in their labours, how came the empires of the world to be scattered o'er the broad face of the planet, and rear their greatness up, in the short space of six thousand years. The difficulty, then, was to reconcile the Mosaic theory with the processes of natural law, and to account, during the insignificant period assigned by the orthodox chronology, for the greatness that had faded and dwindled almost into nothingness, yet left gigantic records behind.

The geological evidences of the antiquity of the globe were then adduced—its primary state as a mass of incandescent, vaporous matter; the enormous length of time necessarily consumed (according to the known rate of radiation of caloric) in the cooling down and condensation of such a mass; the existence of remains of extinct species of animals, fishes, and plants; and the evidences of volcanic, glacial, and atmospheric action, which certainly went a long, long way back beyond that period. It was impossible to account for the exist-



ence of the globe on the theory of six thousand years, for the simple reason that it took a great deal longer than that to become prepared and fit for mankind to live on, and before the first records of the operation of human intelligence now existent amongst us could have been engraved upon the tablets of time.

Turning to another class of evidence : if Adam and Eve were the primal parents of the human race, then all the various divisions, racial and ethnological, that the surface of the earth presented to-day must have come as variations from the original starting point, and the question would be an interesting one—What colour was Eve, and what colour was Adam, that such an infinite variety of colour should be present in the world to-day ? Any experienced physiologist, phrenologist, and observer of the human race, would at once declare the theory of a first pair brought forward to account for the existence of mankind untenable, so long as different and absolute varieties and types of human kind were to be found prevalent in the world. A first pair would have been necessary for every distinct race. The sun never shone hot enough to turn a man's skin black ; winter's winds never beat frostily enough to turn a black man white, and the infinite varieties of temperature were never sufficient to account for either copper-colour, yellow, or brown. Hence, not climatic influences alone, not conditions of life alone, were to be borne in mind in the problem of colour, but other and deeper problems, going to the very root of the question, and leading back to the supposition that if Adam and Eve were the primal parents of the white people, they were certainly not the first parents of all the other people living in the world.

Two facts were, then, established : the inadequacy of the Mosaic theory to account for the facts alike of history and of nature, and the inadequacy of the existence of Adam and Eve as one pair of human beings, to account for the great varieties appearing in the human race of colour, disposition, and organic development.

Proceeding to consider the origin of species, which was the essential thing underlying the question of pre-Adamite existence—man had either been progressively evolved from the *status quo* of this world, or else he was a miraculous incorporation into the economy of Nature, after the establishment of that economy. Either natural processes consummated the appearance of man in this world, or God Almighty made him specially and directly. From the past the question came—Have men ever been monkeys ? And the echoing assurance of science was, that men have never been monkeys, any more than monkeys have never been men. But surely there might be some close connection traced in this wise. When we were making a loaf



of bread, we brought flour, and water, and yeast, and other ingredients, and combined the materials, and made a loaf. That loaf passed through all the preceding stages of the mixing, the raising, the being set, and baked, and was finally turned out a full-grown loaf. But it would not be correct to say that the loaf would have been found as it was in the flour that contributed to its existence. The progressive stages of the baker's art finally built up the actual loaf, put it in the oven, and turned it out. So (to use this homely-illustration) the progressive labours of God Almighty, working through Nature, mixed up the materials of life, so to speak, until at last, having gone through all the necessary preparatory stages, having taken on to itself the various shapes, and forms, and conditions of the various degrees through which matter passes, a human life was placed before the world for the benefit of mankind.

It was true that inorganic Nature preceded organic Nature, and the theologian might say that the dust of the earth could not become vital substance without a miraculous intervention. The theologians, however, would have done well not only to have tried to account for the existence of an immortal soul in *man*, but for the existence of *vitality in Nature also*. The change from solid granite to vital blossom and ripe fruit was certainly a great and mysterious change, and how was it to be accounted for? We had to fall back upon an *inherent* life and power belonging to Nature, the character of which could not possibly be estimated, the source of which could not be discovered other than as that great source of all life, and being, and existence—God Himself. There was, then, a vital spirit *in* Nature. God worked always in and through, never outside and upon, Nature. He was the energising power, working forward through all varieties and modes, striving ever for the ultimate purpose of perfecting that grand triumph of all, the body of man, wherein for the time being resided the central pivot, his self-conscious and immortal soul.

Pre-Adamite man, in the sense of *pre-human* man (which should have been the proper definition of the question), was a fact, in a strictly limited sense. The pre-human man was not a human being in the ordinary meaning of the term. He was something between the strictly animal on the one hand, and the half-human upon the other, and by processes of Nature—none other—the rubicon was passed, the animal laid aside its distinctive animality, and took on the faint foregleams of immortality which the improved texture and structure of the organism there and then, for the first time, permitted to unfold themselves. These pre-Adamite men were not beings gifted with the glories of intellect, with the fulness of consciousness, with the divine grace and growth of reason. They had but dim foregleams



of future possibilities. Nature, then, protecting her children with loving care, and still working for their advancement, improved, by degrees, their environments, until at last, by a process of natural selection and inter-relationship, the earlier empires of savage man became accomplished facts. Wider and better conditions of societary government gradually supervened, until at length it took upon itself the gospel of a religious life, and then, for the first time, a really equitable and honourable social and political organism was built up.

But all this must come by slow degrees—first savage, then barbaric, and ultimately civilised—and Nature, having attained that high state, had to descend the hill-side, until, at length, as with India and Egypt, nothing was left but the almost imperishable records of past grandeur. It was absolutely impossible to conceive of the successive stages of birth, growth and rise, progress and declension, just referred to, as occupying in their evolution and consummation only the insignificant period of two or three thousand years.

It was plain, therefore, that pre-Adamite men were facts in this world's history; that they preceded of necessity the fuller growth and greater complexity of physiological system of the full-grown being; that between ourselves and the animal there was all the difference of a perfected nervous structure; that there was the same divine element running through all Nature that animated ourselves, which was individualised, and a personal identity conferred upon it, by reason of the marvellous complexity and delicacy of the framework around us, the place of which was supplied at death by a body capable of preserving that individuality and consciousness; there was not only a connection between ourselves and Nature, but there was this difference,—that man was God individualised in the human form, and Nature was an outside manifestation of God's providence helping him onwards in this life, and urging him forward to the one beyond.

In conclusion, all the records that the world contained to-day—the philosophy of the ages, rising up in towering grandeur, man's speculations, his conceptions of the planet whereon he lives, and of the universe of which it forms a part, his estimation of the forces and laws of Nature that work around, all point in one direction—that pre-Adamite existence—pre-human existence—must have been a fact in this world's experience, that the narrow compass of six thousand years, or the slight starting point of one single pair, were utterly inadequate to account for the ripened experience of the world to-day on the one hand, and the varieties of humanity on the other. If this were not so, why should even *Christian* geologists strive with might and main to mould the Mosaic record to fit modern scientific discovery and research?



## ESSAYS ON MATTER, MOTION, AND RESISTANCE.

BY JOSEPH HANDS, M.R.C.S.

*(Continued from p. 119.)**The Effects of Light on Ponderable Matter.*

176. The actinic or chemical rays contained in the atmosphere were intercepted by Mr. Hunt from certain cress seed exposed to the full influence of light and heat. The seed for several days showed no signs of germination; in fact, seeds actually placed in the dark sprouted earlier than those situated in the light. The remarkable fact was thus developed, that the luminous principle is actually inimical to the excitation of vitality in seed. Many investigations proved that the germination of seed is more rapid under the influence of the actinic rays separated from the luminous ones, than it is under the sway of the combined radiations, or in the dark. Seed, buried deep, out of the sphere of actinism, and also excluded from the air, will not germinate. Again, seed simply strewn over the surface, exposed to the glare of day, is a long time sprouting, but when placed a little below the surface, where the luminous rays have lost their ability and the actinic energy still penetrates, and where air, moisture, and warmth exist, germination goes on actively.

177. Hydrogen and chlorine will not combine in the dark, but they unite, and even explode, in the light. If a solution of peroxilate of iron be kept in the dark, no action ensues, but when exposed to light an infinite number of gaseous bubbles are seen to rise, as if caused by fermentation, a descending and ascending current takes place, and it becomes gradually yellowish, then turbid, and eventually precipitates as protoxilate of iron, in the form of small, brilliant crystals of a luminous yellow colour. It would appear that certain bodies are capable of absorbing the actinic rays, and then behaving in the dark as if exposed to sunlight. Pure chlorine gas, when placed in the sun's rays, seems as if it absorbed the actinic principle, for now, when mixed with hydrogen, the two unite if deposited in the dark. The actinic influence acts on the earth and rocks, no less than upon the animal and plant. Metals, glass, marble, &c., after having been exposed to sunshine, will, when presented to the action of mercurial vapours, exhibit the fact that a disturbance of some kind has taken place upon the portions illuminated, whereas no change can be detected on the parts kept in the dark.

178. Most persons must have observed the difference between *vegetables* thriving in solar light and those which grow in obscure



situations, or are entirely deprived of its agency. The former show brilliant tints; the latter, by a process of etiolation or blanching, become dingy and white. In the one, the various secretions, or rather creations, come to perfection; in the other, they are either modified or disappear, as we see with celery cultivated for the table. The rosy sides of fruits depend upon exposure to the sun. Plants grown in the dark are not recognisable as to form, &c., until after exposure for a time to light. The animal creation under the influence of light is equally evident, as seen in the dull and dingy tints of polar and subterranean creatures when contrasted with the gaudy and brighter colours of those which inhabit tropical regions. In the human species a due quantity of light is requisite to health. Thus miners are pallid and unhealthy, like the inhabitants of the alleys and courts of cities.

179. *Chemical effect of Light.*—If a leaf is laid upon a sheet of *calotype paper* it will take an impression in twenty to thirty minutes from simple exposure to moonlight, not concentrated by a lens. Some of the salts of gold and silver, especially their chlorides, are very susceptible tests of the agency of light. If a piece of paper be dipped in a solution of nitrate of silver and kept in the dark, it suffers no apparent change; but if exposed to light, it soon becomes purple, brown, and black, through chemical changes.

*Further regarding Vegetation.*—During certain periodical cycles, light excites an action in the buds of plants, thus inducing the circulation or flow of the sap.

*Organic tissues.*—According to Berzelius, the green colouring matter of plants is readily decomposed by light into three different substances: one *yellow*, another *blue*, and a third *black*; and according to the proportion of these three mixed together, different kinds of green must be produced. If a tincture of pure chlorophyl (the green colouring matter of leaves) be exposed to the action of the sun, the green tint becomes in a few hours converted into yellow, for decomposed chlorophyl yields a blue colouring matter. Again, the influence of light will convert starch into chlorophyl. Every part of an amylaceous (partaking of the nature of starch) root, becomes green on exposure to the luminous rays. In autumn, as the green colour decreases, the starch also lessens, and finally cannot be detected by the iodine test. If a plant which is actively transpiring and absorbing under sunshine be carried into a dark room, both these operations are almost immediately checked, even though the surrounding temperature be higher than that to which the plant was previously exposed. The influence of light upon the direction of growing parts of plants, also the opening and closing of flowers, &c., is probably due to its



share in the operations already detailed; thus the green parts of plants, or those which effect the decomposition of carbonic acid—or rather formation or creation of carbon—have a tendency to grow towards the light, whilst the roots have an equal propensity to avoid it. That the first direction of the stems and roots of plants is very much influenced in this manner, appears from the fact that by reflecting light upon germinating seeds in such a manner as that it shall only strike upon them from below, the stems are caused to direct themselves downwards whilst the roots grow upwards.

The sun produces freckles or brown pigment cells in exposed parts of the human skin. The Portuguese Jews who settled at Tranquebar 300 years ago are as dark as the native Hindoos. The birds from tropical climates lose their brighter tints in this country. If certain insects, which naturally inhabit dark places, be reared in an entire seclusion from light, they grow up almost as colourless as plants that are made to vegetate under similar circumstances. The appearance of animalcules in infusions of decaying organic matter, is much retarded, if the vessel be altogether secluded from light. The rapidity with which the water-fleas, &c., of our pools undergo their transformations has been found to be much influenced by the amount of light to which they are exposed. If one parcel of an equal number of silkworms' eggs be preserved in a dark room, and the other modicum be exposed to common daylight, a much larger proportion of larvæ are hatched from the latter than from the former. Dr. Edwards has shown, in the case of tadpoles, that if they are deprived of light the growth continues, but their metamorphoses into the condition of air-breathing animals is arrested, and they remain in the condition of large tadpoles. Light, in conjunction with good food, promotes health, assists in curing disease, and prevents deformity.

180. *Light has a positive influence upon most things, especially the organic.*—The chemical changes which light causes to take place in the vital principles are many and varied. Who does not know the efficacious effects of light upon the feelings; of its pleasurable and sometimes uncongenial action upon the nervous system, and likewise the spiritual principle? The chemical ability of luminous rays are wonderful. What a surprising difference between the darkness of night and the light of day! When the sun arouses into action Nature's every element, as he sheds abroad his inextinguishable effulgent light, over the mountains and valleys of creation, what indescribable delight, when bathed with his influence, does the harmonious individual experience! If the human spirit is deprived of that light which emanates from visible substances and orbs in being, it will soon desert the organism and leave it to perish in the



dark, cold, negative conditions, or else it will struggle to maintain the system in the most inharmonious and diseased state.

181. *Vegetable Light*.—Many flowers, especially those of orange colour, such as the sunflower, oriental poppy, marigold, nasturtium, &c., disengage light in serene and warm summer evenings, sometimes in the form of sparks, and at other periods with a steadier but more feeble glow. Light is also emitted by certain species of fungi, especially those which grow in moist warm places where light is entirely excluded, as in the depths of mines. The light is perceived in all parts of the plant, but chiefly in the growing white shoots. It sometimes ceases if the vegetable be deprived of oxygen or certain other constituents of the earth's atmosphere, either by being placed in a vessel from which the air has been exhausted, or in some other gas having no oxygen in it, as nitrogen, &c., and it re-appears when the plant is restored to air. No natural active luminosity is perceived after the death of the plant. An evolution of light has also been observed to take place from decaying and dead wood of various kinds, particularly that of roots, and also from fungi whilst decomposing. This corresponds with the luminousness of certain animals after their decease. The lucidity of the nasturtium would appear to be sometimes due to the absorption of light and its subsequent liberation, for if it be plucked during sunshine and carried into a dark room, the eye after it has reposd for a short time, will perceive the flower by a light emitted from its leaves. The foliage of the *cenothera macrocarpa* exhibits a kind of phosphoric light when the air is highly charged with electricity. The fungi of the olive grounds are luminous at night, but they exhibit no light even in darkness *during the day*. The subterranean passages of the coal-mines near Dresden are illuminated by the light of a peculiar fungus, the *rhizomorpha phosphoreus*. On the leaves of the Pindoba palm a species of agaric grows, which is exceedingly luminous at night; and many varieties of the lichens creeping along the roofs of caverns, lend to them an air of enchantment by the soft and clear light they diffuse. In a small cave near Falmouth this luminous moss is very abundant. A plant which abounds in some of the jungles of the East Indies was sent to this country, and although dead, was remarkably luminous, and when living, the light which it emitted was very vivid, lighting up the ground for some distance—the result, no doubt, of a peculiar electric manifestation. A Belgian botanist reports from Nicaragua, that he has lately discovered a luminous plant which is gifted with the ability of giving a most energetic electric shock, especially from the points of its leaves.

182. *Animal Light, or the Evolution of Luminous rays from Living*



*Creatures*.—A large proportion of the lower classes of aquatic animals possess, in a greater or less degree, the ability of emitting light. The phosphorescence of the sea, which has been observed in every zone, but more remarkably between the tropics, is due to this cause. When a vessel ploughs the sea during night, the waves, especially those in her wake, exhibit a diffused lustre, interspersed, here and there, by stars or ribands of more or less brilliancy. These latter are due to the larger animals. This interesting phenomenon, when it occurs on our coasts, is chiefly produced by a globular form of these creatures, about the size of pins' heads, like grains of boiled sago. The light would seem to proceed from the nature of the *mucous* which covers them, for this, when removed, retains its properties for some time, and may communicate them to water or milk, rendering these fluids, when they are warmed and agitated, luminous for some hours. If friction be applied to these animals, a fresh quantity of the secretion is perhaps formed, or brought into contact with air, which seems sometimes necessary to maintain, or call into action, this light. Besides the *Acalephæ* (so called from stinging like a nettle) which tenant the deep, we have many of the *Polypifera*, which are luminous in an inferior degree, and also some of the *Echinodermata* (having skins covered with tubercles or spiculæ) which are likewise phosphorescent. Of the lowest class of *Mollusca* (from *mollis*, soft)—the *Tunicata*, or headless mollusks—a very large proportion are luminous, especially those which float freely through the ocean, and abound in the Mediterranean and tropical seas. Among some of the shell-bearing molluscs the phenomena may also be observed, and likewise in the marine *Annalidæ*. Other oceanic animals have similar properties; thus the *Crustacea* (from *crusta*, a hard covering), especially the minuter species, are known to emit light in brilliant jets. The luminous matter appears to be a secretion, or a creation, taking place on the mucous surface of these animals.

183. *Luminous Insects*.—These light-giving invertebrate (spineless) creatures are most numerous among the Beetle tribe, and are nearly restricted to two families, the *Elatoridæ* and the *Lampyridæ* (glow-worms). The former contain 30 luminous species, which are known as *fire-flies*. These are all natives of the warmer parts of the New World. Their light proceeds from two minute but brilliant points, which are situated on each side of the front of the thorax or chest, and from another place beneath the hinder part of the thorax. The light proceeding from these points is sufficiently intense to allow small print to be read in the profoundest darkness. In San Domingo the natives use these insects instead of candles, and tie them to their feet and heads, when travelling at night, to give light to their path



through the forest. In all the luminous species of this class, the two sexes are equally phosphorescent. The family *Lampyridæ* contains about 200 species; the greater part of these are natives of America. Among the larger number of these, the luminosity is most strongly displayed by the female, which is usually destitute of wings. The light of the glow-worm issues from the under surface of the three last abdominal rings. The luminous matter, which consists of phosphorescent granules, is contained in minute sacs, covered with a transparent horny lid; and this exhibits a number of flattened surfaces, so contrived as to diffuse the light in the most advantageous manner. The sacs are mostly composed of a close net-work of finely divided air-tubes, which ramify through every part of the granular substance; and it appears that the access of air through these is thought to be a necessary condition of the phosphorescence; for if the aperture of the large trachea, or wind-pipe, which supplies the luminous sac be closed, the light ceases; but if the phosphorescent pouch be lifted from its place without injuring the trachea, the light is not interrupted. All the luminous insects appear to have the capacity of extinguishing their light. Other insects, not included in the above, possess luminous abilities, as the *Fulgoræ* (from *fulgor*, an effulgence) or lantern-flies, natives of Guiana and China. One of our centipedes, found in dark, damp places, beneath stones, is slightly luminous, and the common earthworm is also said to be phosphorescent at the breeding season. This light is more brilliant with certain insects during the period of the exercise of the reproductive functions than at any other, and is then exhibited by animals which do not manifest it at any other period. Some moths are often faintly luminous. Many fish have the ability of throwing out momentary vivid flashes of light. It not unfrequently happens that an evolution of light takes place from the bodies of animals soon after their death, and even before decomposition has set in. This has been most frequently observed to proceed from the bodies of fishes, mollusca, and other marine tribes; and also evolved from the surface of land animals, and even from the human body. A considerable amount of light has often been seen to be given off from the faces of living individuals who were near their end.

The whole body of some fire-flies is phosphorescent, and when rubbed upon the human skin, illumines it. This fact shows that light can be divided into parts, and also testifies that it is a portable imponderable material principle.

184. There are several of the smaller *Anellidæ*, or marine worms, which are brilliantly luminous when irritated, the luminosity having the character, however, of a succession of sparks, rather than of a



steady glow. It appears from recent experiments, that this peculiar luminosity is the especial attribute of the muscular system, and that it is produced with every act of the muscular contraction in these animals, and may depend upon electrical agency. Luminousness of the surface is sometimes witnessed in disease. Thus a case is recorded by Dr. Carpenter, in which a large cancerous sore of the breast emitted light enough to enable the hands on a watch-dial to be distinctly seen when it was held within a few inches of the ulcer.

185. The phosphorescence of the sea in part owes its origin to a countless host of infusorial animalcules, and among them are the *Mammalia scintillans*, which offers the beautiful spectacle of, as it were, the starry firmament reflected by the surface of the sea. There are also luminous silicious (flinty) shelled infusoria, and likewise the light-flashing ciliated (hairy) animalcules of the cuirassed monads, the *Pro-racatum micans* (glittering), and a species of *Rotifera*, chiefly found in the Baltic sea. The flashing of these creatures is renewed by stimulation. Ehrenberg found in the organs of the photocaris (which emits flashes of light either at pleasure or when irritated or stimulated) a cellular structure with large cells and gelatinous interior, resembling the electric organs of the gymnotus and the torpedo. When the photocaris is irritated we see in each cirrus (curl) a kindling and flickering of separate sparks, which gradually increase in intensity until the whole cirrus is illuminated, and at last the living fire runs also over the back of the small nereis (nymph)-like animal, so that it appears under the microscope like a thread of sulphur burning with a greenish yellow light. In the *Oceania* (*Thaumantius hemispherica*) the number and situation of the sparks correspond exactly with the thickened base of the larger cirri or organs which alternate with them. The exhibition of this wreath of fire is a vital act, and the whole development of light is an organic vivifying process which in the infusoria shows itself as an instantaneous spark of light, and is repeated after short intervals of repose. According to the foregoing facts the luminous creatures of the ocean show the existence of a magneto-electric light-evolving process, in other classes of animals besides fishes, insects, mollusca, and acalaphæ. Further, it might be asked, Is the secretion of the luminous fluid which is effused in some phosphorescent creatures, and which continues to shine for a time *without any further influence of the living animal* (as exemplified relative to the secretion of the *Lampyrises* and *Elatorides*, or luminous leaping beetles, also in the German and Italian glow-worm, and likewise in the South American cucuquo, which lives on the sugar-cane)—is, we repeat, this persistent luminosity a consequence of the first electric discharge, or is it simply dependent on chemical effects or



resident portions of inherent light? The shining of insects surrounded by air has perhaps other physiological causes than those which occasion the luminosity of the inhabitants of the water, as fishes, medusæ (sea blubber), and infusoria. "In addition, the small animalcules of the ocean, being surrounded by strata of salt-water, which is a good conducting fluid, must be capable of great electric tension of their light-flashing organs to enable them to shine so intensely in the water. They strike like torpedoes, gymnoti, and the tremola of the Nile, through the stratum of water, while electric fishes, in connection with the galvanic circuit, can decompose water and impart magnetism to steel bars. The foregoing economy make it probable that it is one and the same process which operates in the smallest living organic creatures, also in the combats of the serpent-like gymnoti, the flashing, luminous infusoria, which raise the phosphorescence of the sea to such a degree of brilliancy, as well as in the thunder-cloud, and the auroral, terrestrial, or polar light (silent magnetic lightnings), which, as the result of an increased tension in the interior of the globe, are announced for hours beforehand by the suddenly altered movements of the magnetic needle."—*Humboldt's Aspects*, v. ii., p. 57.

Sometimes we cannot, even with the highest magnifying abilities, discern any animalcules in luminous waters, and yet, whenever the wave strikes and breaks in foam against a solid body, a light is seen to flash. In such case the cause of the phenomenon probably arises from the light resident in or upon the decaying animal fibres, which are disseminated in immense abundance throughout the great body of water. If this luminous fluid is filtered through fine and closely-woven cloths, these small fibres and membranes are separated in the shape of shining points. After bathing in tropical seas, the naked body continues luminous for a time, from the shining organic particles which adhere to the skin. If a board be rubbed with a portion of the gelatinous *Medusæ hysoecella* the part so treated regains its luminosity on friction with a dry finger.

The luminous property of the *Lampyridæ* (glow-worms) is confined to the terminal segments of the flattened abdomen, which differ in colour from the rest, and are usually yellowish or whitish. This character is peculiar to the true glow-worms, and announces their phosphorescence. The light diffused by the *Lampyridæ* is of a lambent, electric greenish colour: the insect can vary or suspend its luminosity at will. The light-emitting segments preserve their peculiar property for some time after being separated from the rest of the body, and manifest it even *in vacuo*, or when immersed in gases which are *not supporters of combustion*.

186. The quantity of light emitted by putrescent animal substances



does not arise from the greater degree of decay in such bodies, as is commonly supposed, but, on the contrary, they begin to shine some time before any apparent signs of putrefaction take place, and the greater the putrescence the less the measure of light emitted. Light is a chemical element, and forms part of the constituent principles of most bodies, particularly of marine fishes; and it may be separated from them by a particular process, or be retained and rendered permanent for some time. The experiments from whence this inference is derived were made with pieces of herrings, mackerel, and living tadpoles immersed in solutions of Epsom, Glauber's, and sea salts, in all of which a quantity of light was manifestly imparted to these saline menstrua which the latter, under various circumstances, retained for a considerable time. These experiments prove that light is not partially, but wholly, incorporated with every particle of the animal substance. It is probably the first elementary principle that escapes after the death of fishes; and the putrescence is by no means promoted, but rather retarded, by this emission of light. Some bodies have the quality or ability of extinguishing spontaneous light when it is applied to them. These materials are water, both pure and impregnated with lime or carbonic acid, fermented liquors, ardent spirits, volatile alkalies, vegetable infusions, honey, &c., &c. When the spontaneous light is extinguished by some bodies or substances, it is not lost, but may be again revived in its former splendour by different saline menstrua. Spontaneous light is not accompanied with any degree of sensible heat discoverable by a thermometer. Cold extinguishes spontaneous light, but not permanently, since the light can be revived by exposing the substance to a moderate degree of temperature.

*Effects of heat on light when in a state of spontaneous union.*—In every substance there is a certain point of temperature at which it acquires its maximum of lustre. This varies considerably in different substances. Thus fishes, rotten wood, and aqueous solutions become dark at a temperature of between 96 deg. and 110 deg., while glow-worms retain their lustre up to 212 deg. Common water impregnated with phosphorescent light, when, by mere time and rest, without any considerable change of temperature, it had become obscure, was soon rendered luminous when gradually heated by small and successive additions of warm water; but no sooner was boiling fluid added in any considerable quantity than the luminous appearance vanished and was altogether extinguished. It was here observed that if heat be applied to the bottom of a tube filled with illuminated water which has been some time at rest, the light will descend in phosphorescent streams from the top of the tube to the bottom and be gradually extinguished.



*Effects of spontaneous light when applied to or mixed with different substances.*—It was found on touching the luminous matter of fishes, the light adhered copiously to the fingers and hands, remaining very lucid for some time, but then gradually disappeared; whereas the same kind of matter, being applied to wood, stone, &c., at common temperatures, continued luminous for many hours. As to the animal fluids, the crassamentum or thickened part of the blood of healthy persons, as during inflammatory diseases, received the light of a herring, but did not retain it long; and when the coagulum had been kept for some time, and showed marks of putrescence, the light was more quickly extinguished. In some instances the light was ejected in globules, like quicksilver when rubbed with any unctuous substance, and afterwards adhered to the sides of the vessel in the form of a lucid ring. The serum (watery part of the blood) both of healthy and diseased persons retained the phosphorescent appearances longer than the crassamentum, and frequently recovered it when agitated. Urine (both fresh and stale) and bile showed little disposition to retain this light. Lastly, milk and cream, illuminated by mackerel-light, acquired great brightness and retained it for twenty-four hours; but when either of these turned sour they contracted a very extinguishing property, the light in some cases vanishing almost instantaneously.

187. The *Lampyrus noctiluca*, or glow-worm, shines in its infant or larva (caterpillar) state, and also in the aurelian or chrysalis condition. The light exhaled from the full-grown animal is of a pale bluish-white hue, which is only emitted when the insect is moving either its body or legs. In some of the bogs of Ireland a worm exists which gives out a bright green light. The *Cancer fulgens*, a species of phosphorescent crab, is enabled to illuminate its whole body, and emits vivid flashes of light.

188. Phosphorescence is a rare phenomenon among aerial animals of the higher class. But the great American bittern has the ability of emitting a light from its breast equal to the luminous rays of a torch. An emission of light takes place from the eggs of the grey lizard. The Surinam frog or toad is luminous, especially in the interior of its mouth.

189. *Spontaneous Combustion.*—Dr. M. Barry related to Dr. Carpenter the case of a clergyman who had a troublesome sore, occasioned by the combustion of phosphorus on the hand. Twice, at distinct intervals, this ulcer emitted a flame which burned the surrounding parts. It was particularly stated that ignition could not have been effected by any neighbouring flame.

190. Clairvoyants perceive luminous rays always proceeding from the ends of the toes and fingers of different persons, and especially in



this apparent upon the heads of living creatures. The appearance of this lambent light escaping from the human brain was seen by these seers to vary as regards intensity and colour. Under disease it was often green and yellow, but when the subject was calm and in perfect health it was a beautiful blue tint. In olden times this luminous appearance was called the glory, and was often represented as playing over the heads of soothsayers and saints. Many persons in the common state of being are capable of perceiving light emanating from the heads of people when they were under excitement, and also from various animals, especially the feline race.

191. On reviewing some of the foregoing facts, I am incited to conclude that light is an imponderable *material element*, and in support of this opinion I would quote the following circumstances:—

(a.) Light resembles gravitating matter insomuch as it can be reflected and deflected, after contact, like a solid ball. Moreover, a luminous ray, similar to a strip of wood, may be split asunder, as in double refraction.

(b.) Luminous matter is capable also of being divided into distinct portable segments, for it may be applied, like fluids, to the surface of things and be perceptibly mixed up with gelatinous and other glutinous liquids, as if it were a pigment.

(c.) Light can likewise call forth or induce motion in ponderable bodies, like a mechanical agent, or that of the magnet acting on the needle, as exemplified in Professor Crooke's experiments.

(d.) Light can be united with certain ethereal entities, and thus aids in forming compounds, as where it combines with the elements of electricity, actine, heat, and colour rays, &c. It thus assists in constituting the so-called sunbeam. In addition it has been demonstrated that a ray of light can be distinctly separated from the foregoing principles.

(e.) Luminous matter is continually proved to be incorporated with all ponderable materials, as evidenced under the process of friction, percussion, condensation, and combustion, &c.

(f.) Light, like other elements, can have a being, or exist by itself without even the presence of heat, as exemplified in phosphorescent bodies. (See "Optics," secs. e, s, and t; and XL., Addendal Annotations.) There are many kinds of light (like there are varied hues and different electricities, heats, and magnetic elements—see these principles under their different headings), all varying in character as compared with each other. Thus we have—1st, the simple, pure pencils, as found in the sunbeam and diffused light mixed with heat, colours, and actinic rays, and also associated with unparticled matter and the magnetic and sonoro-electric fluids, &c. (See article



on "Sound.") Further, we have—2nd, phosphorescent; 3rd, animal; 4th, vegetable; 5th, electric lights, &c., &c. By the employment of any of the above luminous rays the common eye is enabled to distinguish objects situated in darkness.

(g.) *Persistency of colours.*—It was *assumed* by Newton, and is still taught by natural philosophers, that the different hues of bodies are the result of the absorption of all the colours of light except the one reflected by the tinted object. I must, with all due reverence, beg leave to oppose this *theory*, and shall, I think, by the following facts, prove the impossibility of this source of coloration. It is well known that many blind persons can readily detect different hues, and even the variations of a given tint. Again, I myself, with thousands of others, have known clairvoyants, when miles away from the object—and again if the seer was placed in the darkest of rooms—pronounce the hues appertaining to different bodies. Further, the colours of objects have often been pictured upon certain sensitive surfaces, both in and out of the presence of light. These circumstances prove that colours are constantly *undulated*, both in darkness and in the presence of light from, or rather out of, the different tinted bodies that surround us.

(h.) It is well-known to the sensitive and capable colorist, that there are hundreds of different hues, and as many varying shades; yet when we dissect, so to speak, or decompose a ray of light, there are found only three positive colours, and, according to Newton, four complementary hues, which form the different tints described by this experimenter. But be it observed that these colours are not perceptible until the ray of light is decomposed. It might be assumed, and with truth, that common light merely serves to show us (by intensifying the constantly emanating undulating properties of bodies) the existence of the *innate* tints appertaining to the objects that surround us. We shall, then, presume that coloured bodies do not, in any way, reflect the hues resident in the sunbeam, but radiate their own natural inborn tints. It is true that most objects can, and do, project the coloured rays given off from certain flames, when thrown upon their surfaces, so often demonstrated in our theatres and lecture rooms; and here we find that white surfaces appear as if dyed or painted, as they reflect the coloured rays thus thrown upon them.

(i.) In continuation, it is stated in the schools, "that black bodies absorb all colours, and white grounds reflect them, and hence their appearance to the eye;" but if the colours in common light were free or sensible to our organisation, *white* bodies ought to become tinted, and be also capable of reflecting *these said light colours*, as they do



those emitted during the combustion of certain metallised flames, in the way exemplified above.

(j.) White and black, in common parlance, are said to be no colours, yet white and black surfaces possess as many diverse characteristics as reds, yellows, and blues, &c. Moreover, black and white bodies are found to undulate their external distinctive qualitative appearances after the same manner as the so-called tinted objects, and therefore we must come to the conclusion that white and black should be ranked among colours that signalise or belong to those bodies distinguished as being tinted.

In continuation. Black substances are no more capable of absorbing, and thus annihilating, colours than are those bodies that have white surfaces. Imponderable light merely serves to show the existence—in our general state—of the various hues we behold under its stimulating influence, as it does the being and places of the different ponderable things, with their outlines, that everywhere meet our vision. It would, in one sense, be as reasonable to *imagine* that gravitating bodies are developed by luminous rays, as that colours owe their *origin* to radiant light.

(k.) Many solid white and black bodies, where they are decomposed or become separated into simpler forms, testify to the fact that different colours *assisted* in making up their corporeal characteristics, as shown during the analysis of them; and so of a beam of light which is found to consist of, or be associated with, many imponderable elements (as simple luminous rays, colour beams, heat, magnetism, actine, electro-sonorous principles, metallised rays, and unparticled matter, &c., &c.), *some of these* we can detect and display by resolving—through means of a spectrum, &c.—a beam of light into its ultimate constituents.

(l.) It might, with advantage to our subject, be remembered, that as there are many very different kinds of reds, yellows, blues, &c., so also there are a multitude of characteristic black and white surfaces, all varying in appearance. Further, it is well-known that white fabrics can—by certain chemical processes—be made to assume numerous hues, which do not exist in or among the primary and complementary colours of the sunbeam.

(m.) A pencil of light can never be decomposed so as to display its compound colour elements, &c., by being *cast upon* or simply *reflected* from the surfaces of bodies. To separate a luminous beam into its different constituents, it must be *split*, so to speak, into its various component rays, by permeating certain transparent fluids, or a clear solid substance, such as the diamond or a glass prism, &c. This last circumstance—as regards the colours in light—most positively



proves that the huës we recognise as appertaining to tinted things surrounding us, are not the result of decomposed reflected light.

(n.) It has often been noticed that different artificial and natural colours produce varied strange impressions upon certain animals, and also affect some sensitive human beings. These results are likewise, at times, recognised by the blind, and also in particular diseases, and in this latter case, even in the dark, especially when the tint is brought near the patient. The results in question never ensue when these persons are acted upon by the colours (perhaps from their being so attractively combined) resident in common light. Of course, these sympathetic phenomena do not attach to colour-blind people, by reason that their phrenological organs, which appreciate varied hues, are too *diminutive*, or too dormant and insentient, to measure the characteristic tints of different bodies.

(o.) In summing up the foregoing propositions, I would suggest the three following postulates: 1st. White bodies *reflect* the luminous rays thrown on them, and also undulate from their surfaces—with other qualities—white radiations. 2nd. Black substances likewise throw back the beams of light falling on them, but they, at the same time, emit, with other properties, their innate dark undulations. 3rd. Coloured objects also reflect the luculent rays cast upon them, but they, like black and white objects, radiate, or throw off, from their exterior, with other properties, the tints that specially characterise them. All the above undulating emanations are constantly—whether in light or darkness—bursting from, or out of, each distinct body, and these effluences can write their character on the nervous systems of animals and the life-principle of plants. Further, many of these pulsatory effluxes have been found capable of visibly depicting their bearings, or characteristics, on sensitive surfaces or plates, and this, whether in the presence of light or in profound darkness.

(To be continued.)

---



BRAHMINICAL MYSTIC NUMBERS.—THE PAPACY,  
AND FREEMASONRY.

Since the days when a Bishop of Satzburg\* ventured on an abstruse calculation concerning the accommodation for a certain class of departed spirits in that "deep centre that reconciles all things," down to the present time, speculations of a very heterogeneous character have been allowed to be legitimate, even on ground where angels fear to tread, provided always that a certain limit be not transgressed.

Such subjects, indeed, seem to preclude any very free discussion. At the same time, however, where the object is merely to note *coincidences*, and not to disturb doctrines, a considerable latitude may fairly be claimed.

At the present day, when "churches and creeds" are being so freely discussed in connection with politics, and when every system is made to pass in review before the public, it may be pardonable to offer a few suggestions on the symbolical character of Brahminism, and especially as regards the mysticism of *numbers* (so far as they seem to correspond with modern, or, at any rate, *later* ideas) relatively to systems found in full operation in at least two institutions, one of the priesthood, and the other of the laity, which are now held to be in antagonism.

The works of such orientalists as Sir William Jones, Prinsep, Moor, Max Müller, and many others of more or less celebrity, draw our attention to the cradle of the Aryan race as the source whence the Egyptians and Greeks derived much of their speculative philosophy, and amongst many eminent metaphysicians, and especially those of the modern German school, we constantly discover traces of the same inspiration from the ancient works of the Hindu race before *symbols* and types came to be regarded as objects of a vulgar and corrupt idolatry. Even the gifted Swedenborg does not seem to have been beyond influences such as these; therefore, as *mystic numbers* have formed no inconsiderable part of his brilliant although somewhat perverted expositions, and are at the same time the basis of the concluding remarks in the following pages, the writer proposes in the first instance to touch upon them as merely tentative mysteries.

There are many problems which from the remotest ages have been offered for the solution of mankind, and yet there is sufficient evidence to show that these problems were both invented

---

\* See Burton's "Anatomie of Melancholy."



and solved by some now imperfectly recognised Aryan living in the flight of ages past.

That the following solutions have never been offered to the criticism of the learned may be accepted, so far as the writer knows.

Of mystic numbers, 1, 2, 3, 4, 6, 7, 8, 9, and 12 may be regarded as more or less sacred and auspicious; while 5, 10, and 11 appear to belong to another classification; but of course such dogmas are only intended to be tentative for the present occasion.

Theology—nay, natural religion itself—may be but the allegory, the symbolism, the mythology, in which the earliest great thinkers of the human race sought to mystify, to vulgar and profane minds, the search for the dread *secret of life*, or original or primeval generation; for the discovery of this secret would be the discovery of Deity itself—hence the two ideas are cognate, and in a material form the one symbolises the other.

1. Of *one*, the *Unity*, it is unnecessary to treat, as no rational mind can reject the doctrine of the One Great Cause of all.

2. The number *two* is significant of generation in the form of the mundane egg and other well-known symbols. At the same time the perpendicular line, or *one*, is emblematic of the male principle and of *fire*, hence its use as a sectarial mark of Siva. But *two* is the number of the female principle, and is symbolised by an egg, &c.

3. *Three* symbolises *generation*, or *life*, as distinguished from *creation*\*—hence the *ordinary* sanctity attributed to it, and which has elevated it to the rank of the Divine Unity; and the multiples of three and nine have in all ages, and amongst all highly-endowed races, been regarded as sacred. But of this more will be said when we consider the number *nine*.

4. Number *four* may be the mechanical number.

5. Number *five* also seems to be mechanical, but inferior to *four*.

6. *Six* is a number which, for some inscrutable reason, appears to rule the mineral creation; but why, we need not at present stay to consider beyond remarking that in the Apocalypse it assumes a portentous importance under various forms, and in the opening of the *sixth seal* it seems to signify the disruption of the mineral elements of the mundane creation.

7. The greatly venerated number *seven* may have been derived from what were *once* the *seven* (now six visible) Pleiades; and the early Aryan may have known—what recent astronomers

---

\* Morn, noon, and night made the first day, or past, present, and future.



have declared—that in that constellation is placed the “deep centre that reconciles all things,” and round which the visible universe circles. And moreover, the recognised loss of the *seventh* star may have been the real origin of the belief in fallen angels. At any rate, this number seems generally to have been regarded as the most *unearthly*, and therefore peculiarly heavenly; and botany reveals the curious fact that the *Hep-tandria* is the rarest of all the floral orders. Indeed, combinations of seven are so rare in terrestrial nature that for this reason, amongst others, the early Hindus venerated that peculiar bird\* of grey colour which flies by *sevens*, and not in *pairs*.

In the Apocalypse, in Brahminical theology, amongst even the negroes of the West Indies, who attribute death at night amongst animals to their having accidentally looked at “the Seven Stars” (Pleiades), the number seven is treated with a peculiar veneration, so that it may be regarded as significant of the starry system, BEYOND THE SOLAR, and as the most *spiritual* of all the numbers.

8. Number *eight* is venerated by the Tauranian race, as symbolical of the visible creation, in their curious figure, the *Pa Qua*,† which has some resemblance, but only in form, to the Aryan *wheel* symbol, and the so-called *whorls* of the Troad.

But number eight has deeper significations. Plato calls man an *octave*. It is the number of harmony, and in the scale of vibrations of an octave, on certain musical instruments, the most exquisite and varied curved linear forms—emblematic, in the Hindu religion, of the female principle—are infinitively produced on paper, by the application of an ingenious mechanical contrivance.‡

9. We come now to the number *nine*. This number rules the mundane orb, as *seven* does the starry spheres, and *twelve* the solar system, in which we are included.

But although nine may be termed the mundane number, it is connected, in some inscrutable manner, with our satellite; and whatever the cause may be, we recognise, in effect, that lunar influence; it is powerful on animate as well as on inanimate nature. Here we are conscious of a *link*, but the “*form* thereof” is the secret that has perplexed, and will continue to perplex, all ages.

This lunar influence acts powerfully on the tides, as explained by certain laws; but it acts also on *germination*, and still more

\* *Malacocercus* Grisius. *Sut*, seven; *Bhai*, brother.

† Chinese symbol of Cosmogony. It is a curious coincidence that the *Pa Qua* is the number of a *double octave*, and that the Hindu Zodiac is represented as of 8 parts, the sun in the centre being the 9th.

‡ To the sublimated sense of hearing, the music of the spheres might be *more* than an *idea*! What may not the *Microphone* reveal?



mysteriously on some minds; thus it affects *spirit* as well as *matter*. The lunar month marks the state of womanhood with precision, and, what is still more remarkable, *conditionally*, so that when this conditional, probationary, or expectant state undergoes a *vital* change, and the grand function of Nature is called into activity, then the *lunar* influence altogether ceases for short periods, and is extended; and when the germ of *that* which shall become a *living soul* is conceived (perhaps, in the first instance *spiritually*, or in the mind), the revolution of the lunar month is substituted by the grand cycle of nine such months, or the period of *gestation*; and this is in some measure confirmatory of the hypothesis, that the new being *quickens* at *three* months. Even the number of days of gestation, in the human race, is a multiple of *nine*, and perhaps to this cause may really be attributable the veneration in which the number 288 is held by the Hindus, as emblematic of Deity—the mystery of life! But the ostensible reason assigned for this veneration is surely unsatisfactory, namely, that if divided by any *even* number, the product will always be *nine*.

But 288 contains the multiple of 12, or the *solar* number, as well as of 9, or the *mundane*, and thus, by combining both, it ought perhaps to be explained as the perfect number of *generation*, and not of *creation*, or Deity.

In the Chinese,\* the most ancient existing empire, in which things of remote antiquity have been jealously conserved, we find that the number *nine* forms the *basis* of government. The provinces are 18 in number, the days of mourning for an emperor are 27, the orders of nobility or rank are 9, the Imperial dragon has 81 dorsal scales; and, as emblematic of destiny—rich in all the attributes of power, it yet lacks one sense, namely, that of *hearing*—it may also, as shall presently be shown, bear some affinity to the dragon of the Apocalypse. Analogies are exhaustless, and to the scientific, each symbol might be illustrated by a thousand meanings.†

But to return—As *nine* distinguishes human generation, as a rule, from animal, an exceptional case might give rise to a new object of veneration; and should the period of gestation of the *vaccine* genus correspond in duration with the *human*, then we

---

\* A writer in a popular periodical (the *Leisure Hour*) lately discussed the "Theories of the Origin of the Chinese;" but it is evident that all these theories proceed on foregone conclusions, and the various arguments are much on a par with our early Herald's explanation of the origin of the *Leopard*. The points of resemblance discovered amongst the races of mankind are surely rather physiological than *genealogical*, and the descents from Shem, Ham, and Japhet are, after all, as unsatisfactory as it would be to trace the elephant from the pig.

† The obsequies of a Pope last nine days.



have at once a clue to the worship of the bull and cow.\* But the *cause* was veiled from the profane vulgar or the obscene scoffer, and the lofty priest of Nature—the man of thought, self-ordained and anointed, in virtue of selection, high mental exaltation, or even Divine inspiration—did not presume to suggest *revelation*; he himself did not *worship* the brute beast; he sought to *protect* it, as bearing analogies to the human race, and no more; he simply stood on the farthest tide ripple of the Great Unknown, and was silent.

Innumerable facts tend to the belief that the secret of Deity and numbers, and hence of religion, is embodied in the mystery of *life*, and that for some reason, too deep to gauge, the Creator fixing the standard of mundane *time* by the heavenly bodies, created life in harmony with certain *natural* numbers—*natural* because immutably fixed, and established in conformity to our allotted place in the solar, and consequently in the universal, system.

We must always look into the *nature* of things, to discover their absolute connection with certain numbers, and therefore artificial and arbitrary connection must come to naught, as incapable of standing mathematical tests.

The great Swedish mystic pursued this plan, as did also Newton; but the former, like Kepler, seems, in some respects, to have been carried away by a brilliant imagination, and, straying from the narrow path, to have wandered among sublime phantasmata. His genius raised a vision in which he may have lost the reality of truth.

Of Pythagoras, Aristotle, Plato, and other ancient philosophers, in search of “the Unknown God,” it is unnecessary to speak. One sought a knowledge of Deity, another of Deity through the operations of the mind, and another through material agencies. But the starting point of their investigations was the East.†

*Natural* causes having established the specially mundane character of the number nine in connection with life; we find it again in the sacred pages of the *Apocalypse*, where the dragon pursues the *woman and child*, emblematic of human life, *gestation*, or generation. And, again, the number of the beast, perhaps erroneously *written* “six hundred and sixty-six,” was

\* A cow is *dry* three months before calving.

A female of the human race completely heals on the *ninth* day after parturition, and with her *first* child has no milk until the *third* day after.

In the lower animals we find that the feline tribe (dogs and cats) gestate *three* months, and a newly born kitten is blind for *nine* days. A rabbit gestates *nine* days; but analogies are too numerous for these limits.

† There is a curious semi-masonic archæological order or society which discusses this question in favour of India.



rather 6, 6, 6, or *eighteen*, the first multiple (by duality) of the same *nine*.\* And yet again, we recognise this number in that of the elect of the *twelve* tribes, namely 12,000 of each, equal to 144,000, another multiple of *nine* ( $1 + 4 + 4 = 9$ ).

In this sacred book, we have combinations of the solar and mundane numbers of frequent occurrence, but the above brief illustrations will be sufficient for the present purpose.

Before proceeding to the next number, it may be observed that the Hindu zodiac, is represented as of *eight* parts, thus, in some respects like the *Pa Qua*, or symbol of Cosmogony, amongst the Chinese, which latter is the parent of "*Oraculi*," and the so-called "*Book of Fate*,"† with the sun in the centre, thus making *nine* figures.

10. Decimal calculation came from the Brahmins; but ten has never been considered a propitious number, as we are led to infer from various circumstances. First, in the Decalogue, its character is *prohibitive* and *penal*. In the coming Kalki Avatar of Vishnu, it is the number of *final doom*. In our fingers it is the symbol of the *doom of labour*. It is peculiarly a number of the *material* universe as opposed to the spiritual, and typifies the completeness and consummation of all things of the material universe.

11. The number *eleven*, as characterised in the Old (Joseph and his brethren) and New (Judas Iscariot) Testaments, seems to be regarded as, in some obscure way, associated with imperfection, or evil; but the precise cause of this reputation does not appear; nor is it even suggested in any portion of the Vedas, or other ancient books.

---

\* But 666 is itself a multiple, and a very peculiar one too, of 9; for if we divide it by 2, the product is 333, which divided by 3 is 111, the third multiple of the peculiar number 37, at which point we may pause, for here a new series of mystic links arises, which connects *nine* with the mysteries of *ten* and *seven*.

In the Apocalypse we find (in chapter vi.) the first horseman resembling to a certain extent the Brahminical *Kama*, or Love, while the three that follow are mounted on horses in the same succession or order of *colours* assigned to the Hindu Triad, namely *red*, *black* (or *dark blue*) and *white*; the last-named having moreover one of the principal attributes of Siva.

There is another much more remarkable allegory to be found in chapter xii. The woman in travail, pursued into the wilderness by the dragon, was there 1260 days, another multiple of 9; and the dragon casting forth *water*, may be found depicted in China, under corresponding circumstances; and this perhaps points to a *certain* operation of Nature, in connection with parturition.

Another coincidence is observable between the *number* of the steps leading up to the Imperial Altar of Heaven, at Peking, and the square (144,000) of the New Jerusalem.

Thus, in the principal religions of the East, we find a general correspondence with the mysticism of Sacred Writ or revealed religion, which seems to indicate a common origin probably far more ancient than chronologists are willing to admit.

† Sir Walter Raleigh had one precisely similar to that in "*Napoleon's Book of Fate*."



12. *Twelve* we accept as the symbol of the solar system—of the months, the zodiac, &c. It is the number which possibly governs all the *planetary* orbits. And these *orbits* may have been symbolised in the language of the prophet Ezekiel, when describing “wheel within wheel.” In his vision he may have perceived this wonderful system—or such a description may obscurely indicate a now forgotten knowledge once possessed by the Magi—just as, in the Apocalypse, St. John may have recognised dimly our modern artillery in those strange monsters vomiting forth *fire and smoke*, rushing forward like chariots to battle, and whose *sting* was in their *tails*. But such forms never at that time having been seen by mortal eye, the inspired writer borrowed his imagery from mythology, or perhaps from the tradition of those monsters produced in chaos before the creation, as deciphered recently on the clay cylinders of Nineveh. Yet, another question is still behind these.

But in the midst of allegories and symbols, the ancient Brahmins did not venture to define the *nature* of the Deity. On the contrary, in one of the Vedas is expressly declared that the assembled gods were awe-stricken on a certain occasion, by the *presence of that which could not be described*, and which was only *perceptible to each, alone*. Agni, Vayu, and others, went to *look*, and *felt* the Presence, but returned only to say, that it was THE INDESCRIBABLE, until, at length *Wisdom*, the spouse of Siva, the *third person of the Triad*, told them that it had vanished, and that they had been in the presence of the Great Unity itself, who is unknown in his essential nature, *even to the Triad*.

As is well-known, the mythology of the Scandinavian Aryans was almost identical with that of the Hindus. The two Cosmogonies were precisely the same—even to the churning of the primæval ocean, and the name of Heaven.\*

This latter name is peculiar, and the true origin of it has never been explained; nor could it be fully realised without a local personal knowledge of India.

Himala, Himalaya, Himaleh, the greatest mountain range, as regards elevation, on the face of the globe, is the Hindu heaven.

As the traveller in the plains awaits the dawn of light, the first revelation made to him, while all below is still obscure, is a far-off radiant region, suspended, as it seems, in *mid-air*, with the blue above and the blue below, which the first beams of approaching day lights up with a startling effulgence.

The *line* of perpetual snow is perfect and unbroken, while

---

\* Himel—Himaleh—Himalaya.



the icy peaks rise in clear and glittering pinnacles. But the *distance* makes it impossible to distinguish the under-portions of the range from the usual blue of the horizon. As the sun rises higher, however, the glorious vision fades, and the Hindu heaven seems to have vanished from the entranced gaze of the poor and ignorant early wanderer.

The Brahmins, being aware of such impressions, taught the people that the habitation of their gods was there. The approach to these sublime altitudes was guarded by wild animals; and thus, while a hold was obtained on the fears of the superstitious, the early civilisers of our race had leisure to raise mankind, in its own estimation, above the condition of the lower animals.

But who were these select few—those gifted men, that were constrained to guard their mental treasures against the violence and indifference of their fellow-men? History has left no record of their names, so far as we are able to determine, but the first true reader of Nature was he who, contemplating the *conical seed* of the lotus, first recognised in its form the rudiments of geometry and precise knowledge; and on the *disc* of this cone he placed the image of Deity!

Before concluding, let us observe that the number I. is significant of *electricity*, and that electricity represents UNITY in its purest mundane form.\* II. represents the magnetic poles, and also the magnetic curves; curved lines again, as in Hindu sectarian marks, being significant of the *female* principle, while in the magnetic curves the *calculations* involve clearly the product of *nine*. It symbolises the two divisions of animal life—waking, when we provide for the body, and sleeping, when the mystery of the unreal, or dreams, is revealed. Moreover, it is symbolical of that magnetic influence which invigorates the aged when in contact with the young and vigorous, but which, when one of feeble frame stands in the midst of a large concourse of the young, is sometimes overpowering, and produces an icy chill.† III. represents Time, universal *colour* in nature, &c. The Brahmin's *time*, as *time*, as well as number in their Triad, showing that at the final doom, *Time* and the *Triad* will come to an end, and that *Unity* only will exist.

Under certain circumstances, the Brahmin priest, before contracting a *third* marriage, goes through the ceremony of wedding that peculiar plant, the *Birthwort* (*Aristolochia Indica*—emblematic of the Yoni); and under slightly different circumstances

---

\* It is remarkable that the Hindus rarely, if ever, dedicate temples to the First Person of the Trinity.

† It is said in the Vedas, that two birds dwell in one tree, the one human and active, the other passive, divine, and contemplative. These in the mind engender thought, and thought engenders matter that comes into material life.



he weds the *plantain* (*musa*, emblematic of the lingam), and in this latter instance, he seems mystically to change his sex, as in ecclesiastical heraldy, a bishop impales his *personal* arms as the *femme*. Other resemblances might be pointed out, as, for example, the shape of ecclesiastical seals, with the Sivaic mark of the *Ionic* cone—also a symbol of the female principle. IV. The symbol of construction, of the square, of the cardinal points, of the life of the lower animals perhaps, of the four parts of arithmetic, &c. V. Of *five* points is the Egyptian star form, as distinguished from the Brahminical of *six*. VI. The symbol of the mineral kingdom—and perhaps of cohesion, strength, &c. The nature and forms of crystals elucidate the place of this amongst other mystic numbers.

The past, the hopeful present, the unwritten future, are typified in the *colours* attributed to the Hindu Triad. Although Brahma, Vishnu, and Siva, are respectively *represented* personally, as *yellow*, *blue*, and *white*, the *colours* which *designate* the *attributes* of the three, are *red*, *blue*, and *white*; and this is all the more remarkable, as the Brahmins were close observers of Nature, and must have known that red, blue, and yellow, are the *primitive* colours, and as such, supposed to be representative of the Trinity; why, then, did they substitute *white* for *yellow*, and thus originate the modern tricolour?

But besides the reasons given for *red*, that it is the colour of the *material* world; for *blue*, that it is the type of the firmament; and for *white*, that it represents *Time*, there are apparently deeper reasons for the Hindu Triad being represented—at least, in two of its persons—by *red* and *blue*.

In heraldry, and in ordinary line engraving, the natural eye at once perceives that the *vertical* effect of upright lines, indicates *red*, fire, &c., while the *horizontal* lines convey the impression of air and water, whether straight or wavy; and it is a curious fact, that the ancient sectarian Brahminical marks bear out the inference that the *red* of Brahma was represented by the perpendicular line, or lines, on the forehead, and the *blue*, by the *horizontal* of the Vishnaiva sect. Moreover, the Brahmins regarded these *two* kinds of lines as emblematical of the *dual creative* function of Nature.

But why was *white* assigned to Siva? Not, surely, as representing *time* in its *ordinary* sense; therefore we must look for the real meaning of this colour in the sectarian *marks* of his worshippers, which are generally of a peculiar form, and seem to symbolise the principle of *generation* in Nature, and so, by inference, the *future*.

Having cursorily reviewed the ancient Oriental symbolism of numbers, and offered a few suggestions, to be taken for what



they are worth, we may now proceed to consider some points of resemblance and divergence between Brahminism, Roman Catholicism, and Freemasonry; and it is curious to observe how great a resemblance there is between the three in their *symbolism*, and how much greater an antagonism in their *principles*.

The Brahmins make proselytism an impossibility; the Papacy regards it as a necessity in conformity to the Divine will; while in Freemasonry, as an organisation of the laity, and open to all creeds and churches, it is accepted by the esoteric moral man, but *not* by invitation. Freemasonry holds out a hand to those who respect civil equality, and who profess observance of the moral code; but requires no confession of faith, except in "the Great Architect of the universe;" and its symbolism agrees with its policy, and is taken from all systems. The Romish Church, on the other hand, repudiates the sources from which its symbolisms seems to be derived, and is intolerant of all other churches and creeds. As for the Brahmin,\* in his aristocratic exclusivism, he is not disquieted by the growth of other religions; and, making them welcome to such of his own symbolisms as they may desire to imitate, he is, at the same time, not unwilling to appropriate anything that is susceptible of being carved into harmony with his own typical or symbolic pantheism. Like the Freemason, he is eminently pacific, whereas the Roman Catholic is scarcely quiescent, and, in this respect, is to the Mohammedan what the Freemason is to the Hindu.

When we say "the Romish Church," our meaning goes beyond the domain of St. Peter. We mean the typical church of worldly aims, worked out through spiritual means. Thus, whether we say the *Eastern* or the *Western* Church, or call them "schisms," or "Babylon the mystic," it matters not—we mean that which would subject political or social liberty to the tutelage of childhood; we mean the power that invites, coerces, and subjugates, as opposed to that which dallies while it accepts, or that which rejects or ignores all save its own. It is surely as great an error to under-rate folly, as to over-rate wisdom or knowledge. It is sometimes difficult to distinguish the one from the other; and we too often find that from the sublime to the ridiculous—to use a hackneyed saying—is but a step.

The Pope's letter† of the 7th January, 1875, against the in-

\* We refer to the educated philosophical Brahmin, and not to the ignorant idolator.

† A PONTIFICAL BRIEF.—(Translated from the *Monde Maçonnique* of May, 1875.)

Pius IX. Dear Son, Salutation and Apostolic Benediction.

For a long time already, and almost since the origin of the Masonic sect, the Holy See, which very clearly discovered its malice, had condemned and smitten it ("frappé") with reiterated excommunications.

The Holy See had well predicted all the evils which it was about to cause to re-



stitution of Freemasonry is a remarkable illustration of the wisdom of not undervaluing an enemy, and from the point of *infallibility* "the Craft" has no reason to complain when the Supreme Pontiff tells it that "no human power is capable of struggling against" his own—a very consolatory assurance for "the Most Worshipful"!

Although essentially non-political and non-theological, this great social institution has received, curiously enough, the greatest impetus in the march of civilisation from the very forces which it does not recognise.

Eminently *conservative*, Freemasonry is equally *liberal* in its fundamental principles; and while, in itself, a commonwealth, by a strange paradox there is probably no public body in England more attached to the Crown. Its *good works*, so unostentatiously carried out, contrast very favourably with the *faith* of its mortal foes. Its consideration for the frailties of human nature, its principles of mutual forbearance, and its generally pacific labours in the cause of humanity, give it a practical influence throughout the whole social system, certainly most powerful, although unintentionally so, against priestcraft. But it is only within the last twenty or thirty years that the innovations called "the higher orders," or chivalric degrees, with their gorgeous costumes and *religious* ceremonies, have been imposed upon the body of Craft Masonry, or that restricted to the first *three degrees*, in which the religious, or rather sectarian element, is unrecognised. On

ligion and to civil society. In truth, this worthy daughter of Satan making man as God, and establishing each as the supreme judge of his own conduct, rejects by this very fact, all authority divine and human, and shatters, in consequence, the tie which constitutes all society. The warnings of the church have been useless, and many men among those who ought to have suppressed this monster, have not feared to favour it so well that at the present moment no human power is capable of struggling against it. It is necessary then, in order to tear out this venomous root of evils which affects the nations and forces into the eternal abyss the souls which it severs from life and salvation, to have recourse to the Omnipotent. Alone He was able to drive from heaven the true father of this sect; alone He can make it at present disappear from the earth. We deem it right then to recommend the project which you have formed of appeasing the Divine Being, offended by this impious sect, which in its lodges ("*antres*") especially heaps insults and blasphemies upon Him, to ask at the same time of the Lord the destruction of this sect, and the conversion of those who belong to it, and for this to form, with the permission of the ecclesiastical authority, a society of which the members, if they are priests, should unite in threes every day to offer up the holy sacrifice of the mass to the Holy Trinity; and if they are laymen, to make to the same end, and every day three communions. We are rejoiced to learn that the society, scarcely formed, has already received a great augmentation. We wish it still more considerable increase, that so in multiplying those who pray, it may appease more rapidly the anger of God, and obtain the grace which we desire. It is for this, my dear son, that we give you, with love to you and all your associates in this work, the Apostolic benediction, mark of the heavenly favour and pledge of our paternal goodwill.

Given at Rome, at St. Peter's, the 7th January, of the year 1875, of our Pontificate the twenty-ninth.  
PIUS IX. POPE.



the other hand, these innovations are regarded by sensible Masons simply in the light of pageantries ; but should the " League of St. Sebastian," or any other " holy league," turn their arms against the *Latomarian* (erroneously, however, so called) brotherhood, there can be little doubt that Templars, Hospitallers, Red Cross Knights, would be quite ready to do them battle !

But speculative universal Masonry is pacific, and under other names was probably at a very remote period one of the earliest developments of Aryan thought.\* Its symbolism may at this day be traced on the ancient sculptures and ruins of India, and its origin may be coeval with that of *unrevealed* religion itself. *This* symbolism, moreover, can be clearly *distinguished* from the religious or mythical, and of this there are notable examples, both at Allahabad † and at Agra.

But amidst all these views ranging under " His Holiness " and " The Most Worshipful," there still remains the unfathomable abyss of uncertainty. No one has ever ventured to tell the secret that enshrouds the dead ; ‡ no footfall has been heard recrossing the boundary of another world ; and the author of that work, with most attractive title, " The Day After Death," fails to satisfy the reader, after all his scientific arguments, that he really has any more knowledge of that dread day than the Brahmin of five or more thousand years ago. The man who discusses the problem to-day enlightens us no more than his prototype might have done in the flight of ages past. Moreover, he signally fails in his main argument, and, after all, is obliged to beg the question. Unlike Hugh Miller, the author, discarding the splendid *compromise* so poetically elaborated in " The Testimony of the Rocks," turns from revealed religion and looks to the astronomical God of Day as the end-all of our various transmigrations.

The gifted Michelet has drawn attention to his countrywoman's mystic book, " The Torrents "—but in vain ; we still want the dead man restored and placed in the witness-box. Until we have him there, the most orthodox amongst us must have at times a feeling—it may be but transient—of uneasiness. The scientific Frenchman will not accept our faith as an answer to his metempsychosical argument, although after all, when his argument fails, he asks us to accept *his* faith. If we go to the Buddhist he tells us of *Nirvana*, and will not listen to our doctrine. He tells us that before he can do so we must produce our man in the witness-box. The Brahmin, however, is more tractable—he admits that we both have about the same extent of

\* See an article on " The Sacred Lotus," in *Notes and Queries*, Dec. 4, 1875.

† What was the Brotherhood of the Sât Bhai of Prág ?

‡ The author of this Paper is not acquainted with Spiritualism ; hence the sentiment in the above clause.—*Ed. H. N.*]



knowledge, and that *that*, after all, is next to nothing; and, as he is the representative of one of the earliest of Aryan minds, before idolatry became a fashion, we to a certain extent practically admit his claims on our respect; and in India we are sometimes even more liberal, as the bell in the temple of *Gyah*, presented by a European civil servant; the Musjid at Allahabad, built by one of our old generals; and the guard of honour commanded by an English officer at the annual festival of Jugger-nath,\* seem to attest.

Since the above was committed to paper, the writer has read Sir H. S. Maine's lecture† at Cambridge on India, and also at the same time a curious work entitled "Oriental Fragments."‡ In the former, Brahminism is designated a "religion of compromise," and the justness of the definition is amply borne out by the writer's personal experience. Possibly the myth of *Krishna*, which has originated so much controversy may after all be not quite two thousand years old. *Bavani*, the goddess of many Himalayan tribes, may be an adoption; and the remark made to a recent author by Mr. Kerry, of a mission school in Calcutta, that Hindu girls often say Christian prayers with real feeling and devotion, still further strengthens the same view.§ Amongst so many gods the degenerate idolator thinks, perhaps, that he can lose nothing, and may be all the better of an extra object of propitiation and worship.

But compromises are more frequent than they are admitted—the sculptured Jove submits to the loss of his thunderbolt and the substitution of the more domestic key, and the "D.O.M." of our monuments is quite as significant as would be the adoption in its integrity for one of our cemeteries of the Greek maiden fastening her sandal for the journey to Elysian fields.

Amongst the eccentricities of advanced theologians we sometimes detect the revolution of thought to what it seems to have been in the earliest times, and especially in India, where a purely *spiritual Unity*—but in some respects a *material trinity*, or triad—is frequently suggested in the Vedas and other works, as for instance (already noted) where the gods are alarmed at the *presence* of the *Unity*, who is recognised *as such* by *Uma*, the wife of the third person of the triad; and again, where it is said that at the day of final doom even the gods of the triad will be awaiting the consummation of all things. There are, doubtless, many inconsistencies in these curious myths, but still the inference remains (speaking merely argumentatively) that the

\* The form assumed by *Krishna* after having lain three days in the grave.

† The *Times*, 25th May, 1875.

‡ By E. Moor.

§ There is a curious story told of an ex-chaplain in India, offering to sell his prayers to a Hindu. The offender was dismissed.



*Unity* will survive the trinity or triad, and it is equally clear that under various impersonations—to say nothing of symbols, which need not be mentioned—the latter was regarded by the enlightened few as the power of Love in nature,\* a faith which, under the strangest disguises, is even now traceable where perhaps most repudiated.

The words of deepest spiritual import, thus interpreted by physiology or astronomy, assume a new, or, it may be, their *old* significance; and differences of faith are often reconciled when most insisted upon. But this objectionable reconciliation has the effect of shattering idolatry, and the “many mansions” are recognised in the words of the Chinese whose apathy startled the Abbé Huc: “Religions are many—truth is one.”

With such heterodox thoughts, there are those who fancy that they perceive in the animosity of the Church of Rome to the institution of Freemasonry† causes referable to profound instincts in our nature, and they believe that the former, consciously or unconsciously, seeks universal dominion through the so-called *weaker*, and is consequently perplexed at an exclusive association of the *sterner* sex springing up in the midst of nations, and baffling *without premeditation*—and for this very reason, all the more powerfully and mysteriously—the astute devices of priestcraft, to shackle thought and arrest the progress of mankind towards enfranchisement from superstition and ignorance.

The Brahmin of yore seems to have differed from Rome in this: that he did not so much desire to arrest progress as to preserve exclusively the progress that he had himself made; but in settling his social system his principle was to *subordinate* the weaker sex, and in this he has succeeded so completely that the Hindu women have been, as a rule, unable to establish their supremacy by the institution which we call “society.” Moreover, the early Brahmins, having garnered some profound truths from their intense study of the phenomena of life, seem to have feared that in a religion intended for the advancement of the human race—or at any rate of their own—unless such truths could be veiled, knowledge would become prostituted to Communism, and that the elevating spiritual element, unappreciated by the profane and vulgar, would be destroyed. And this has, to a certain extent, happened in a way originally unintended, for the veiled symbolism has itself become the worship of an immoral idolatry.

It may be observed that we have treated the Romish, or, by imputation, any other church, not from a religious or doctrinal

---

\* Kama (god of Love). Dyam is in Sanskrit the *Meridian*.

† By the way, did not Solomon's celebrated Architect derive his Masonic knowledge from India?



point of view, but from that of its own mystic and political pretensions ; and in like manner we have abstained from discussing Freemasonry on its own esoteric merits, but simply as a remarkable social growth, which has sprung up, from uncertain seed, to become a great power amongst nations, and which, in common with its great antagonist, has transmuted for its own purposes the mysteries and symbolism of numbers derived probably from the Brahmins, and taught by the early Egyptians and Greeks, and which have always exercised a certain influence in the hands of the priesthood over the superstitious. Thus, while themselves the foundation of science, numbers have become too often the playthings of the thoughtless, or the snares of the ignorant, who have picked them up by the great ocean of Truth. No one has, as yet, discovered the clue to the true origin and significance of numbers ; but in the pursuit of such knowledge, sects have been founded as each ardent inquirer has stopped short on perceiving the practical use that might be made of them, in obtaining a control over the minds of others, by glimpses of startling combinations, which suggest more than they actually reveal, but which science readily verifies. L.-A.

#### MATERIAL PHENOMENA.—*APPORTS* (THINGS BROUGHT).

[A number of valuable communications from the pen of Mr. Clavairoz have appeared in former volumes of this magazine. In vols. iv. and v. was printed "The History of a Spiritualist," a very thoughtful and instructive treatise. In it appears the history of "Giafferro," so frequently alluded to in the following communication.—Ed. H. N.]

##### HISTORY OF ALFONSO.

Spiritualism offers a subject of investigation as infinite as the source whence it proceeds. All is, however, as yet in confusion ; the knowledge acquired seems to be rather the materials of a science, than a science itself. The phenomena already noted embrace so large a horizon, they appear so rapidly under new aspects, that we find ourselves unable to class, in regular order, this immense amount of testimony, whose authenticity and importance are beginning to shake the conventional scepticism of learned bodies. Those who do not yet believe—those who are slaves to a scientific formula, or to a doctrine or system—seek for phenomena which belong to the order of material things. They require the assent of their senses to enable



them to consider possible, or even probable, what science contemptuously denies. Some courage is necessary to face the ridicule and meet the negations promulgated by men whose names impose upon the multitude. It is, then, right that we should take all imaginable precautions to avoid imposition, and that we should carefully register results to which the senses can testify.

This is logical and necessary ; it is the first step of the first stage. It is the base of all initiation ; for every serious conviction is gained by personal labour. The assertion of another person is but an incentive to verify an allegation. One's own experience alone can give the stamp of certainty.

But whatever may be the value attributed to physical phenomena to cause a commencement of belief, this value diminishes in proportion as faith is established. Physical phenomena are limited, like the matter they place in movement. The same expressions will be nearly always shown, and the maximum of expansion can be foreseen.

It is different with spiritual manifestations. They admit of no limit, for the force which produces them belongs to the infinite. The proof is no longer objective ; it is beyond the analysis of sense ; it is in the domain of logic, in the kingdom of thought, that it finds its evidence, and however irrefragable may be its acceptance, it leaves always a presumption of a previous initiation. It is, then, to men of reason that these manifestations in preference address themselves. They speak to their heart, to their intelligence ; they unfold to their eyes horizons where, perhaps, hypothesis may be seen, but whose depths the soul alone can measure.

I never approach this subject except with great reserve. In now publishing the history of my connection with "Alfonso," have I the proof in hand that "Alfonso" has ever existed ? Most certainly not. I am completely ignorant whether what relates to him be truth or fiction ; but I assert—and that is enough for me—that "Alfonso" is not myself, that he has a marked individuality, original and consistent, and I think that something is to be learnt from the different points of this narration. It being admitted that the souls who leave this earth continue in a different sphere the life commenced here below, we have the greatest interest in learning the conditions which obtain in this other state of existence. We can only arrive at it by a patient and careful analysis of the testimony offered to us, and the recital will prove, once more, what a remarkable analogy there is between the successive phases of human life ; how slow and gradual is the transformation, but also how the law of progress acts with beneficence and certitude. Material proofs, arising here and there, will unite the two orders of phenomena, and their objectivity will serve as a



counterpoise to the natural hesitation which one feels in believing, outside of the testimony of the senses.

In the month of October, 1873, "Giafferro" asked leave to present to us one of his friends, "Alfonso Brunetti," the son of Gaspero Brunetti and Elgina Bevilacqua—born at Turin, in August, 1815, and died in April, 1860, at Arezzo, where he was sub-lieutenant in the 47th regiment of infantry. He was a thoughtless spirit, a good liver, always quick, full of jokes and wit. His conversation had something strange about it, from the fact that you would have said he was living in a material world. He frequented balls, went out fishing and hunting, took part in banquets, delighted in the view of beautiful creatures; in short, as spirits create for themselves the worlds that they imagine they inhabit, "Alfonso" had only found in the change of existence, pleasure in having escaped from earthly infirmities. Always satisfied, laughing, gay, he only thought of amusement, and any serious subject drove him away. Incapable of doing harm, on the contrary, always ready to be of service, he had no desire to improve himself; he always left us whenever we spoke of God, not from any spirit of antagonism or irreligion, but simply because it was repugnant to him to fix his attention upon so serious a subject.

Such dispositions seem appropriate for the manifestations of physical effects. We know, indeed, that pure spirits leave these phenomena to the care of spirits less advanced, and I think that we could almost establish a graduated ladder of purification, whose manner of manifesting would mark the degrees. This deduction from the effects produced, with the sentiments expressed, would be of the greatest interest at the present time, when the investigation of the *savans* is almost exclusively bestowed upon material experiments—that is, upon those which are furnished by spirits who are the least disengaged from earth, and the most resembling individuals still imprisoned in the terrestrial life.

We had not, at that time, any meetings at my house, but we were communicating every day with "Giafferro," our doctor, "Clementina" his wife, and other intelligent spirits, through the mediumship of Caterina.

On the 11th of November, 1873, we were *en famille*—that is to say, my wife, Caterina, her mother, and myself—when "Giafferro" informed us that "Alfonso" had assisted at the inauguration of Cavour's statue at Turin, and that he had gathered there a flower, which he hesitated to give us because it was faded. The next day we begged "Alfonso" to bring us the flower, although it was no longer fresh. Our hands formed a chain in the darkness, and after twenty minutes, five loud raps called for a light. The table, made



of maple, was without a cover, "Alfonso" having himself slipped it off. What was our surprise, upon bringing the lamp, to see upon the table a piece of a funeral crown, composed of five leaves of laurel, still fresh, and three *immortelles*, the whole attached by a thread of green silk.

Every new phenomenon produces lively emotion. This was the first time we had had an *apport*. The conditions were such that illusion was out of the question. We always sent the servants upstairs, and we were always alone in the suite of rooms when we sat. It would be absurd for one of us to endeavour to deceive the others. We can answer for each other's honesty, which cannot be questioned. We were certain that there was nothing on the table at the moment I took away the lamp. Our hands were not disjoined, and no one had moved from his place. How, then, had these laurel-leaves and *immortelles* come, which an instant before were not in my house? We were compelled to admit the faculty which spirits possess of decomposing and re-composing matter, for the doors were closed, and we were alone. One can believe another's account, but one is only really convinced by one's own experience, and that is where lies the value of physical phenomena. They furnish a solid base of which our senses are, so to speak, the cement, and from them the soul goes forth to discover the cause which hovers above sensuous observation, and which can only be seen by the light of the spirit.

On the 8th of December, 1873, we had produced darkness for ten minutes under the usual conditions, when the five raps called for light. To our great delight we found upon the table an Italian five-centime coin, and an ancient amber pearl, with a hole in it, and bearing the appearance of great antiquity. We were admiring the new *apports*, when "Alfonso" wrote rapidly by Caterina's hand: "Take care to observe that this is not all, for in taking my cloak from Giafferro's nail, I have committed an act of rudeness to him."

It is necessary to know that the seance takes place in our bedroom, which is divided in two by a curtain. In the side where we sit is the table already described, in the other is a large iron bed, by the side of which is a press and a window; then, between the press and the window, is a space occupied by an arm-chair, above which was hung the portrait of "Giafferro," mediumistically drawn by my wife.

It was very cold, and before the dark seance, "Alfonso," always joking, had said that he was frozen, and that, upon coming in, he had hung his cloak on the nail which held "Giafferro's" portrait. His last remark, then, was *apropos* of his first joke. Desirous of seeing what had taken place, we rose up hastily, and drawing back the curtain, we ran up to the portrait. It was turned with the face against



the wall. It must have been unhooked and re-hooked. Imagine our astonishment. "I have done," then said "Alfonso;" "take care of the effigy of my king, and of the amber, which is pure. Believe that beings and things the most insignificant may yet be useful. Hitherto I have been joking, now I speak seriously. All that you have seen has only been done to give you faith. You know that the Lord has said, 'Happy are those who have not seen and yet believe;' how must it be with those who have seen."

These few words sum up the whole philosophy of material manifestations, destined to lead man, undeniably supported by the testimony of the senses, to the point where he becomes ripe to receive spirit revelations.

"Alfonso" did not find the fluid sufficient for his operations. On the 29th of December we had invited two safe and serious friends. We began the seance, when "Alfonso" brought us a sea-shell that he said he had taken at Ostend. We found at the same time on the table a gilt nail, which we recognised as being the one which held "Giafferro's" portrait before it had been turned round. We ran to the portrait; the nail had indeed disappeared.

The 8th of January, 1874, Mr. ——— was in the drawing-room with my wife and Caterina, when I came into the room to prepare for the seance. Upon entering, I satisfied myself that "Giafferro's" portrait had still its face against the wall. What was my astonishment, upon turning round a second afterwards, to perceive that the portrait had disappeared. No deception was possible. I had come alone into the room; the portrait was there, and before I had gone out it had disappeared.

I called out, they came in, and the seance was commenced by asking "Alfonso" what he had done with the portrait. "Look for it," said he; and my wife, guided by a secret intuition, found it upon the top of the bed. As to the nail to which it had been suspended, it was impossible to find it. "Alfonso" then proposed to Mr. ———, who gratefully accepted the offer, to bring him some antique object. Hardly was the lamp taken away when we heard the distant sound of something which fell upon the table, and immediately the five raps resounded. It was the nail of the portrait to which had been fastened a ring of red clay, evidently ancient. "Alfonso" afterwards succeeded in showing some phosphorescent lights, and in passing a current of cold air over the hands.

I continue in chronological order the relation of "Alfonso's" *apports*, all of which took place under the same conditions of isolation and moral certitude. There was no paid medium, no proselytism to be attempted, and the friends who had joined us were tried Spiritual-



ists. I can guarantee the perfect honesty of all the co-operators as of my own. None of them suspected that the result of our investigations would one day be published.

The 19th January, 1874—"Alfonso" brought a piece of a black-lead pencil, which Mr. ——— recognised as having been taken from his house; and my wife was brought a second amber pearl, more ancient than the first. He then gave an exact description of Mr. ———'s bedroom, which none of us knew. While we talked he showed his approbation or disapprobation of what we said by rapping on the table. January 26—*Apport* of an ancient ring of red clay. Feb. 17, "Alfonso" produced phosphorus. It appeared especially upon my own hands and those of Caterina, at first as a shining light, afterwards like stars. Rubbing the part lighted produced a luminous smoke very thick, smelling of phosphorus, which continued to come off the hands in full light a quarter of an hour after the seance. March 23—One of us being absent, there was a diminution of fluid. The lamp was taken away, hands joined; and after half an hour, upon the lamp being brought back, we saw nothing upon the table. "I had brought an amber pearl," said "Alfonso," "but there was not sufficient fluid for me to recompose it—it remained twisted. We looked for it, and finished by finding upon a piece of furniture out of the reach of the persons present, under a pamphlet, an amber pearl, which certainly seemed to have passed through a suddenly-arrested fusion. The seance terminated with phosphorescent lights. April 6—"Alfonso" had promised on the 23rd of March to bring a tooth of Cavour's. The 30th of March, he told us that he had half extracted it. Later in the day, at the regular seance, he brought a tooth, which had evidently been taken from a skeleton, for it was covered with calcareous matter. April 20—Here took place a psychical phenomenon, as interesting to observe in its development as any material manifestation could be. I have often said that elevated spirits despise this last kind of experience and rarely lend themselves to the production of it. It is on acting upon the sentiments that they wish to create faith, and it is curious enough that it is so difficult for them to understand that it is necessary for the human senses to judge for themselves before the spirit can consent to be convinced. There are, however, moral proofs which are as good as physical ones, but then there must be a beginning of belief where examination has been made without impartiality or prejudice. I have said that "Alfonso" was a frolicsome, laughing, joking spirit, incapable of a serious thought, escaping by a jest every time he was called upon to reflect. But in the midst of us, in our seances, he listened to moral exhortations which were given us by "Clementina." This seed must have borne fruit. To our



great astonishment, "Alfonso" said to us one day that he felt the desire to progress, to purify himself, to do something for the benefit of his soul. He ceased to bring us things of which he did not see the use, and he asked our advice. A week previously our exhortations to him to pray had been entirely in vain. The word moral had no meaning to him, and to our good words he replied: "Put out the light and let us amuse ourselves." His eyes, however, appear to have been opened. The thought of God entered into his heart, and with it the love of doing good and the desire to become better. Now he despises what he called oyster-fishing, and the question of his advancement seems to occupy him entirely—the first symptom of a change, the progress of which it is interesting to follow. June 8—"Alfonso" has undertaken the mission of enlightening spirits still material. He brings seven of them to us, and we give them a moral lecture. His anger is great when his neophytes declare they have understood nothing. June 22—"I pray now," "Alfonso" tells us; "I go to the bed-sides of sick people, whom I bless, laying my hands over them: that makes them sleep, and I am satisfied as they are. It is pleasant to do good." June 29—Dark seance. Upon bringing in the lamp we find upon the table a paper twisted up, and upon unrolling it we read: "Alfonso, who loves you. Glory to the Lord." There had not been upon the table either ink or paper. "Alfonso" told us that he took the paper out in the street, and that he condensed the pencil. This is the first time we had had direct writing, and the phenomenon was all the more interesting inasmuch as it was completed by an undeniable *apport*, for I had not in my house any paper like that which "Alfonso" had used for his writing. September 21—"Alfonso" takes out a screw from the table; we look for it in vain; he promises to return it. September 28—"Alfonso" has not returned the screw, but we find upon the table a little round piece of iron showing quite recent marks of the file. October 5—"Alfonso" present, joking in his usual manner. I hum a tune, which he accompanies by raps. After half an hour of darkness we find upon the table a screw just newly turned, and showing all the appearance of never having been used. Upon being told by "Alfonso" to try it in a place in the table where a screw is wanting, we find that it fits perfectly. After this "Alfonso" pretends to be thirsty, and asks for a glass of water. We place on the table a glass three-quarters full of water, and then we make it dark. After a few minutes, upon bringing back the lamp, the glass is empty, and the water spilled over the table. It is scarcely necessary to say that no one had moved, and that the chain had not been broken for a second. November 18.—"Alfonso" brings two new *apports*—a very little sea-shell and a



piece of rough coral, old and worm-eaten. December 7.—However interesting may be the history of physical phenomena, inasmuch as they reveal the existence of unknown laws, that of psychical is far superior, for it tends to raise a corner of the veil which hides our own future. It is from this point of view that the most insignificant details in appearance of the life of spirits have an importance greater than what one would at first be inclined to accord to them. The question of *apports* is well adapted to attract attention, for it allows the possibility of an action upon matter; and, as these *apports* are always made intelligently, we are induced to conclude that they are the work of an intelligent will. Accident, coincidence, blind force, are so many confessions of a radical impossibility to discover a solution that reason could accept if the intervention of the invisible world is put on one side. But how much more attractive it is to follow a spirit in his progress in the moral life, showing us by his acts the grandeur of this law of purification, the practice of which assuredly leads to happiness. We have shown “Alfonso” the mocker, the sceptic, and the utterly useless being, gradually becoming so changed as to feel the inanity of his life, and of becoming desirous of being able at last to merit a better destiny. In proportion as this sentiment becomes strong in him, in proportion as he prays more fervently, his power of producing physical phenomena diminishes, and we have fewer *apports*. He has just announced to us that he means to give up the material manifestations; but, in order to be agreeable to us, he will bring us another spirit.

At the same time that he was saying this to us he made a similar declaration to Mme. Adelpa Von Vay. At the commencement of his connection with the baroness, he had been captivated by her remarkable beauty. The feelings which he expressed with regard to her were entirely human. He was enthralled by her radiant beauty and grace. All at once, on the 1st of December, he goes to her and says, that he means to cease manifesting, but that he had found a substitute in America, an Indian called “The Great Serpent.”

The 4th of December Mme. Von Vay wrote to me that “The Great Serpent” had made a terrible noise in their house. About ten o’clock the windows had been shaken and a tremendous noise was heard in the attics and in the stoves. M. Von Vay ran to the window and saw upon the white snow a black figure running towards the garden-gate. Thinking it was a thief, he called out and went for his pistol. He then descended into the court with the servant, but they could not find any trace upon the fresh snow, and the garden gate was locked. My spirit-friend told me that it was “The Great Serpent.”

We knew what great power (often difficult to combat) inferior



spirits are possessed of when once they have obtained an entrance. We consulted "Giafferro." He was vehemently opposed to the admission of "The Great Serpent," who was a low spirit, whose fluid might trouble Caterina's. So when at our seance "Alfonso" told us that he had brought him, we refused his co-operation. Nevertheless, as our curiosity had been raised, and as "Alfonso" affirmed that he would do us no harm, we agreed to make one experiment. We made darkness, and "Alfonso" asked that the doors which led to my study might be left open. I did not entirely carry out his desire. There were three doors, and as the last one, my study door, would have admitted light, and prevented the darkness required, I shut it and only left open the other two. After a few minutes three persons saw blue images, which proceeded from the middle of the table, and which as they arose took the form of the rainbow—presenting bright colours. Five raps called for a light—there was nothing on the table. "Search," said "Alfonso." We looked and Caterina found upon an arm-chair, which was close to the window, a frame containing photographs. This frame is always hung at the far end of my study above my desk. We all wondered how the frame had come from my study through a closed door.

One of the members of our circle is clairvoyant, and he has great power over the spirits. Being obliged to go, he said to the person who accompanied him, that he felt that his presence kept "The Great Serpent" in order, and that he was afraid there would be a disturbance after his departure.

The chain is again made, and "Alfonso" insists that we ask for the aid of "The Great Serpent" to replace "Giafferro's" portrait. Remembering our friend's advice I hesitated in taking advantage of this assistance, and I offer "The Great Serpent" to pray for him. At the moment when I pronounce the word "God," Caterina's hand is violently seized: she furiously traces circular lines, breaks the pencils, tears the copy-book, and convulsively rolls up the paper. We remake the chain, and call upon God to calm this storm. But hardly had Caterina taken again the pencil when the same fury takes possession of her: she then places a small crucifix upon the table. The scene changes immediately, calm obtains, and "Clementina" comes, with her usual suavity of language, to reprove us for not having followed "Giafferro's" advice. "The Great Serpent" had disappeared. March 1, 1875.—In a few minutes of darkness we obtain "Alfonso's" signature in direct writing.

Since then we have not had any material phenomena. "Alfonso" prays, moralizes, and every Friday he brings a troop of bandits, assassins, thieves, and wretches of all kinds, whom he has undertaken



to convert, and to whom I read the Bible. "Alfonso" applauds by loud raps at the passages which please him, and when we forget the time for the seance, he reminds us of it by formidable raps given in broad daylight. He says repentance is gradually touching them, and he has promised us some strange histories about these catechumens.

F. CLAVAIROZ.

## PHENOMENAL SPIRITUALISM.

BY JOHN WETHERBEE.

A good many worthy Spiritualists seem inclined to doubt the fact of materialisation of forms or spirits. So many frauds have been connected with this phase of manifestation that one is hardly blamed for being doubtful. If literally true, as I am sure it is, the fact is a very astounding one; and to a trained mind, especially if an unbelieving one in Modern Spiritualism, it seems impossible. No matter how strongly testified to, there is a mistake—two and two never make five. It is not everybody who can see light by a supplementary "dimension" to the three that monopolise space.

I think a few things which are now well-proved to a few intelligent minds inside, and also outside, of the spiritualistic ranks, and which are in the advanced wave of the spiritual manifestations, are going to command attention as natural facts and phenomena, that will get a hearing, open a new field of unlimited extent for scientific exploit, irrespective of the basic truth of an extension of life beyond the dissolution of the body, as it were, seeking first the kingdom of facts and its lessons, and the important truth of immortality will be added as a matter of course. That will take care of itself.

One of these things is the independent slate-writing. If I know a thing certain in the current affairs of life, it is the fact that before me now I have two slates, with intelligent communications on them, that were written without any human contact, by the will-power of some spirit, those two slates being new, and fastened together, and the medium never having seen the inside of them until after the said communications had been written by an invisible presence or power; that the sun shines on this planet is not a truer fact than the one I have just stated.

Another of these things is the tying of knots in a string when the ends are sealed, which has lately been testified to by Prof. Zollner. This is but another form of the "ring test," which is effected thus:—A sitter and the medium grip each other by the hand, and retain hold. The iron ring lying on the table somehow gets on to the arm,



and that without the hands relaxing the grip. This is supposed by some to be a passage of solid matter through matter. I must confess I am as confused about the fourth dimension theory as I am of the absurd one mentioned in connection with the ring. I am glad intelligent men, of scientific training, are admitting the fact—the solution will not tarry long.

The third thing is the materialised apparition. There is a frail, sickly-looking woman in Rochester, in the State of New Hampshire, about 75 miles from this city (Boston) in whose presence these spirit-forms are materialised, and occasionally recognised. I have lately visited her for the second time, and have no hesitation in saying the manifestations were genuine. I was one of a party of eight, two of whom were ladies. It was an easy thing to thoroughly examine the premises near the corner of the room where she sits during the seance, and it was as free from any possible contrivance, or confederate connection, as an empty glass bottle. The ladies then examined and re-dressed the medium, and there was not a white rag of clothing upon her person, not even a cuff, a collar, or a pocket-handkerchief, and, under watchful surveillance after the dressing, she was seated on a small cane-bottomed chair, and the black curtain dropped, leaving her in a small triangular corner of the room. Some twenty-five or thirty apparitions came out into the room, males and females, of different weights and sizes—a boy, an Indian or two, and a baby. The female spirits were all dressed in white, with profusion of lace or gauze in the form of veils, over dress, and trains, &c.; the male figures were varied, and the Indian was dressed in Indian style. I don't pretend, in this brief sketch, to be minute, only to say that there could not have been any outside aid, and there could not have been a pennyweight of white cloth smuggled in by the medium, had she been so disposed; but it would have taken a very large trunk to have held all the fabric and material that appeared.

Now, here is a fact of the materialisation of apparent fabrics of various kinds out of the circumambient air. Seems to me here are three nuts for science to crack; (1) Independent writing on a shut or protected slate; (2) The tying of knots in a cord with the ends sealed; and (3) the materialising of flowing robes and male and female dresses, to say nothing of the spirits themselves.

With the full knowledge that fraud abounds in this world, and even among mediums, as well as ministers, I know, from very critical observation, that what I have herein stated are all unmistakable facts, and will be vouched for by disinterested and reliable parties.



## THE FUTURE AUSTRALIAN RACE.

BY MARCUS CLARKE.

*(Communicated from Melbourne by the Author.)*

## OUR ANCESTORS.

There has been much vaguely talked and written about the Coming Man. There is certainly no doubt but that in a few years the inhabitants of the colony of Australasia will differ materially in their mental and physical characteristics from ourselves. Let us consider for a few moments why and in what probable respect this difference will occur.

The tendency of that abolition of boundaries which men call Civilisation is to destroy individuality. The more railways, ships, wars, and international gatherings we have, the easier is it for men to change skies, to change food, to intermarry, to beget children from strange loins. The "type"—that is to say, the incarnated result of food, education, and climate—is lost. Men rolled together by the waves of social progress lose their angles and become smooth, round, differing in size only; as differ, and remain similar, the stones of the sea beach. The effect of the increase of ease in the means of locomotion has been making itself apparent for the last three hundred years. With the discovery of the Americas there came upon all nations a sort of spirit of freedom and a desire for change. Though the terms "Greek" and "Roman" had been held to signify two distinct and certain forms of physiognomy, yet in the feudal towns of *moyen age* Europe were priest-artists who revived the one, and stern crusaders who re-begat the other. The Moors brought the eagle beak of the East into Arabian Spain; and the fair-haired Northmen, precursors of Columbus, sailing to the site of Boston city, bid their savage virtues live again in their descendant redskin warriors. The only "types" which had come down to predecessors of Columbus as unaltered, say the archæologists and the naturalists, are those of the Copt, the ass, and the hyæna. The Chaldean is much the same as he was pictured on the Ninevite marbles 3000 years ago, but in 1600 years the Egyptian has had far less change than the average face of the dweller by the Mediterranean knew during the three hundred

Tracte des Degenerences, Physiques, Intellectuelles, &c.: Morel, Paris, 1857. North American Medico-Chirurg. Review, 1857. Transformation of the British Face: Simcox, 1869. Portraits of the Tudor Family: Arundel Society. (Exhibited South Kensington, 1865.) Miniature Portraits: Arundel Society. (Exhibited South Kensington, 1865.) Hogarth's Works: Folio, Heath. Rowlandson's Caricatures: Folio, Ackerman. Gilray's Caricatures: Folio, Bohn. Sketches of H.B.: Folio, M'Lean. Sir Joshua Reynolds: Folio, Sam. Reynolds. London *Punch* until 1853.



years between the death of Phidias and the placing of the Castellani sarcophagus in the British Museum.

As for England, variation in national physiognomy is so astounding that one is tempted to suspect the representation as untrustworthy. Yet Holbein, Vandyke, Reynolds, and Romney were fully competent to represent what they saw, and we are forced to admit that, from the chivalresque attitudes of Vandyke, through the sedate romance of Reynolds, to the grosser intelligence of Romney, and up again to the spiritual brightness of Richmond, the changes are true, though sudden. When we say of a portrait, "What an old-fashioned air," we are really saying, "That is the grandfather's face come back again." Even in the rudest times, and under the most unfavourable conditions, those who drew the human face did their best to copy the faces of their neighbours. An Egyptian artist never presented a fair-haired or round-eyed face as his type of beauty. An English manuscript illuminator made his saints and virgins always delicate and blue-eyed. Through the clumsy handling of the monkish painters, we can still understand that our ancestors had, for the most part rolling eyes, fleshy noses, larger at the tip than the bridge, long upper lips, strong chins, and coarse jaws. The long, symmetrical, oval face, with its arched eyebrows and melancholy air, has, in these days, disappeared. The Norman type is becoming absorbed. The face is square. The Danish eagle-beak—the characteristic of the predatory race—sinks down and broadens into the sensual and cogitative proboscis of the ruminating animal. Those stern eyes which glowered in the semi-darkness of a down-drawn visor have vanished. The cheeks, no longer pressed forward by the locked helmet plates, relieve the mouth and raise the corners of the lips. The nation, recovered from the wars of the Roses, seemed to breathe freely. A chastened air of spirituality is cast over the brows, and the features appear moulded by serious thoughts and high emotions. The liberal patronage which the Tudors bestowed upon art culminated with the arrival of Holbein in England, and from that date we can examine at our leisure the gradual collection and assimilation of those features which make up the "English face."

Let us turn to the Royal portraits, as they are reproduced for us by photography, and understand how it comes that at masquerades and on the stage the modern countenance looks so obtrusively out of place. The type of his nation during his life was Henry the Eighth, and Holbein's picture of him does more than Froude's whole history to show us his real character. Broad, burly, somewhat sullenly he stands, his feet wide apart, his hand thrust into his belt, and his eyes looking straight at you; his lips are full, sensual, firmly shut;



his nose broad and clubbed, with heavy wrinkles at the brows, his eyes crow-footed, and his ears widely open. The expression is that of the elephant—great sagacity, little refinement, strong will, and courage dauntless to resist. Anne of Cleves, who simpers beside him, is a long-chinned, big-eyed, narrow-browed creature, perfectly placid and wholly uninteresting.

But when we come to Anne Boleyn, Jane Seymour, Kate Howard, and Parr, we see the vivacity which was to thrill the next generation already stirring. Anne Boleyn is plump, voluptuous, but of high courage and temper. But for the full jowl the face would be refined and daring. Seymour has an intelligent, earnest, and thoughtful face; Howard a sly, sensual, and self-restrained one; Parr has the forehead of an artist, and the mouth of a wit. Intelligence gleams from each head. In the next generation the coarseness of lip and jaw vanish. Mary has no sexuality save that which springs from disease. Her pressed, vinegar lips, the lower one almost split, the wide nostrils, and the prominent cheek bones, give ample assurance that the broad lips, the high brow, and the somewhat æsthetic weakness of her husband could never match her temper. Elizabeth's fine and haughty face comes like a burst of sunshine among these gloomy intellects. Who is accountable for that aquiline nose, and that firm, sweetly-moulded chin of Louis de Hervé's picture? Anne Boleyn perhaps alone could tell. Elizabeth's nose is a revelation in national physiognomy.

The club nose was the characteristic of the age. Louis XII. had it; so had the noble, serious face of the Duke of Suffolk; so had Dorset, Jane Grey, James IV., Francis II., Mary of Guise; the beautiful, intellectual face of Guilford Dudley would be nearly Greek but for this trait. Elizabeth and her rival, Mary of Scots, were almost alone in exception. Were not the supposition too fanciful, one might imagine that they escaped the influence of parental impress, and that their minds moulded their features wholly. The heads of both women are keen with intelligence; there is not a trace of the sensual weakness or the sensual strength of the last generation. An age of Spensers, Wriothesleys, and Raleighs was at hand. Women began to rule, not through the flesh, as in the days of chivalry and lust, but through the spirit. Elizabeth and Mary were alike in one regard. They were both incapable of loving, and both for the same reason. They never met a master, or at least one who cared to master them. Elizabeth was too contemptuous to surrender, Mary too confident to keep. One scorned to admit a lover, the other disdained to obey him. The key-notes of passion struck by these two women vibrated through Britain. Men became adorers, poets, adventurers, to win the one;



murderers, rebels, plotters, martyrs, to secure a lasting claim upon the other. What result had this state of things in moulding the fleshy masks which these daring and impetuous spirits wore? Let us see.

The portrait of Spenser shows us a haggard-eyed, eager-browed, and disappointed man. From the eagerness, the disappointment, came the banishment of the world, the turning to nature, the yearning for the good—the Faery Queene. Sir Nicholas Poyntz has a long curling upper lip and no chin; Babington is an ardent visionary; Drake has soft, curling hair, a streaming silk beard, a full face, and a look of deep melancholy. A beautiful miniature of Barbor (who, by the death of Mary, was delivered from the stake) is a most notable face. Nothing of the former generation but the firm jaw remains. The nose describes a waved line, the lips are keen and close, the forehead broad and slightly retreating, the eyes large, well opened, and at once sad and scornful. When we compare these faces with those of the Duc d'Anjou, cold, cruel, and selfish; Henry Valois, weak, mean, and treacherous; the Duc de Guise, violent and conceited, we begin to understand how England succeeded in creating a literature and reforming a religion. The only French face which presents strongly the characteristics of the English one of 1500-1600 is that of Coligni, the Admiral of France, murdered at the Huguenot massacre. The type of the intellect which was foreshadowing the reign of the Grand Monarque is to be seen in the wonderful and beautiful face of the infamous and delightful Catherine de Medicis.

Out of this melancholy and thoughtful splendour what came? Take the portrait of William Lenthall, Speaker of the Rump Parliament, on the one hand; and Charles the First, when Prince of Wales, on the other. Charles is a young man of high brow, secretive mouth, heavy nose, and a head remarkable for its narrowness. There can be no question that the spirit which animates such features is at once irresolute, rash, and untrustworthy. Lenthall is sour, grim, and bitterly in earnest. The relentless mouth, with its snag-tooth, the pinched nostrils, the long, sloping nose, the eyes scaled like those of a snake, present a type of extravagant melancholy even more detestable than that of the English king. Between these extremes, however, there is a whole gamut of notes. Cavaliers and Roundheads were both gallant fellows, and if some portion of the dash and fire of the old barons held the one, the grave and serious air of the thinking thrall gave solidity to the courage of the other. The square brows, serious eyes, and stern air of the daughter of Sir Richard Stewart is preserved in the rugged and thoughtful face of her son, Oliver Cromwell.



With the Restoration came the reaction. Black-browed, hysterical-lipped Charles loved pleasure, and gathered around him wits and rakes. Have not all the portraits of this Court the same air? Make allowance for the similarity of costume, for the fact that the artist, having to paint every woman half naked, endowed each with the same redundant bosom and flowing hair, and we shall yet be forced to admit that all the "beauties" are very stupid, sleepy-eyed, over-fed persons; in their "fitness" resembling Dudu, but though "large languishing, and lazy," yet by no means of a "beauty that would drive you crazy." The men are better. Rochester and Sedley had brains enough to have made them great men, but the large mouths and bald temples show that the curse of the age was upon them and that they were too lazy to be virtuous. Across the Channel, however, men of the world enjoyed life still. The Court of Louis le Grand was crowded with men of genius, and the best of much that was good in a society which existed on a quagmire, looks out of the serene and religious eyes of the second wife of Louis Quatorze, Françoise D'Aubigné, Madame de Maintenon. There was no woman in England equal in sense and wit to the widow of Scarron, but there was also no one equal in boldness and villany to Frances Howard, the prisoner of Sir Thomas Overbury.

During the next century the increase of the means of living gave a solidity to the jaw, and banished the wrinkling lines of thought around the eyes. There arose a race of refined Elizabethans. The English face in the days of Anne was the face of indolent greatness. The very vices of the age were those which sprang from a disdain of consequences. Men lived, made love, fought, drank, got into debt, or died in a stately manner, doing out of sheer indolence all those things which the train of the French Regent—his clever, pimpled, careless face is the mirror of his age—did in laborious pursuit of pleasure. The strain of French vivacity yet lingering in the airs which blew over the kingdom, gave us eager, impulsive Pope; genial, careless Steele; brought us, by force of its example, the bitterness of Swift; the salacious humour of Sterne; nay, even the jovial tenderness of Goldsmith; while the back-bone of "old English manners" (as eating, drinking, and healthful profligacy were termed) saved the nation from ruin in the general overturn of the long-threatened French Revolution.

From this period the country of English physiognomy lies straight before us, with finger-posts on either side. Gainsborough, Reynolds, and Lawrence have reproduced our ancestors in their habits as they lived; Hogarth, Rowlandson, and Gilray have taught us how to recognise them; Lavater how to talk with them. These men and



women were our immediate forbears, and yet we are no more like them as a race than they were like the men and women of the Puritan days, than the Puritans were like the Elizabethans, or than the heroes of the Armada and the Spanish main resembled the feudal barons or the knights of chivalry.

With this much of introduction, let us proceed from the accession of George I., and note the causes which have continued to produce those nondescript physiognomies which we meet in our daily walk. We are all familiar with the terms—"an Elizabethan face," "a Puritan face," "a face for hair powder," "a nineteenth century face." We know still better the expressions—"an Oriental face," "an Italian face," "an English face." Let us endeavour to understand what these terms mean. Let us see why, in a few years, we may talk of an Australian face, and what that face may be like.

#### OURSELVES.

When we look at these portraits of gentlemen in white wigs, and ladies in short-waisted dresses, which adorn the walls of some few houses in the colonies, and are reproduced by the score in Wardour Street for the benefit of modern gentlemen who are desirous of begetting ancestors, we are struck with one peculiarity—the fullness of the jowl. In the portraits of notable men this peculiarity is almost exaggerated into a defect. Johnson, Goldsmith, Garrick even, had it. It is one of the signs of the times, and stamps a man as belonging to the Georgian era—to the days of Hogarth's "Beer Street," Smollett's "Feast after the Manner of the Ancients," and Gilray's "Evacuation of Malta." What is the cause of big jowls, full temples, and bull necks? What, in fact, is the cause of the Georgian face? Simple excess of aliment. The men of 1720 to 1795 were gross feeders. The Germans are notorious crammers. It is their capacity for gorging, which is the measure of their power. They are a race of strong-willed men—men combative and masterful. Experience shows that hollow-templed men are poets, philosophers, and essayists. *Facts* show that the wits who were supplanted by the strong thinkers of the Hanoverian invasion were exactly such hollow-templed fellows. From the instant the Germans poured into England—from that instant began the reign of full feeding and of drink.

Not to confine ourselves to the respective duration of the uninsurable lives of Kings, let us consider, as from a height of observation, the British people from Hogarth to Gilray. Their recorded lives are records of alimentary excess. "The Gate of Calais" is a jest at the sparse feeding of the French nation, and is remarkable as a proof that Hogarth, who may be justly considered a type of the middle-



class Englishman of that day, had no notion of nutriment save in the shape of lumps of cooked flesh. His Frenchmen are represented as having become lanterns upon a diet of rich soups, and his English as having been reared into grand adiposity by the mastication of beef-shins and collops of veal. In "Beer Street and Gin Lane" we see the same theory expressed. The drinkers of gin are squalid, haggard, and thin. Men kill themselves; women drop their children over area-railings; corpses are thrust into coffin-shells. All is hideous and terrifying. The beer-drinkers are presented, not as well-contented, home-keeping persons, but as boozers, fat, swollen with malt, fermenting with new yeast, rudely amorous, bestially desirous of all sensual gratification. This full-up-to-the-throat sort of happiness was really what was enjoyed at the time. In "Midnight Conversation," hot punch in huge bowls lends zest to song. In the "Rake's Progress" the hero is dyspeptically insane. In "Marriage à la Mode," a cur, half-starved, leaps on the table to seize a bone. In the "Four Stages of Cruelty" the good boy offers his cake to save the life of the tortured dog. Everywhere intrude shapes and forms of eating. In "Midnight and Noon," the girl whom the black boy is kissing, carries a huge pie. In the "Industrious Apprentice" a whole row of Aldermen are seen, with napkins swathed under their fat chops, gnawing bones. In the "Election Dinner" the prevailing taste for gorging and guzzling may be said to have reached its height. One man has burst his waist-belt. One pours wine over his friend's head. The *dissecta membra* of the feast lie around, as are scattered the fragments of a carcase torn by dogs. The host is dying of a surfeit. Oyster-shells literally pile the tables. Tobacco-smoke completes what gluttony began, and burdened stomachs kick against their load.

Let the reader bethink himself of the incessant device employed by the novelists of the Georgian era to produce an *embroglio*. What is the excuse for Mr. Tom Jones, Mr. Joseph Andrews, or Mr. Peregrine Pickle leaving his chamber in the inn? A modern writer, true to modern facts, would insinuate sleeplessness, a desire to smoke and so soothe the too active brain, fear for his own or his horse's safety—a thousand other matters turning upon mental exercise. Nothing of this sort occurs to the heroes of Fielding or of Smollett. They go to bed and sleep soundly, but are awakened by the effects of their gluttony. "Joseph, in whose bowels the roasted pork was still sticking," and "Jones, who began to feel the effects of the punch, combined with the too hearty supper which he ate," rise from their beds and, returning, blunder into different chambers. The device seems so easy that we are convinced it is natural. The men of that time



did habitually that which men of our time do but seldom—they over-ate themselves. The caricatures of Gilray and Rowlandson are full of allusions to this practice. To put out of mind those grosser jests with which the student of caricature history must be of necessity familiar, we can remember the “Orgies of the P—— of W—l—s,” and that recurring decimal in the humorous sum the “Household Economy of Farmer George.”

The example of riotous living set by the Regent and his friends was, however, an example tempered in some degree by taste. Escaped from the insularity of her moral position, England contrived to get into her cooks’ heads some notions beyond the roast beef, even though she was compelled to achieve the task by conquering the nations who understood the art of living. During the reign of “H. B.” we notice that the faces depicted are less gross than of yore. Lord Althorp is a heavy-jowled man, to be sure, but the rising curve of little Lord John’s nose had already risen above the horizon, and the Iron Duke brings back the severest Roman physiognomy. Though the sensual lip, the wrinkled throat, and the retreating forehead were not to be eliminated for a generation, we see clearly, in the first pages of the struggling *Punch* that the English national face has undergone a change. It has become lighter and more keen. Science advances, restrictions upon trade are removed, men, no longer embittered by fierce party struggles, turn their attention to money-making. Victoria reigns. The husband of the Sovereign is a man of wide sympathy and philosophic mind. Under his auspices philanthropy becomes fashionable. Universal peace brings attempts at social improvement, engineering schemes are projected, industrial exhibitions held. The picture has another side. The importance of trade is absurdly magnified. To die “rich” is considered to be worth the cost of living an unhealthy and dishonest life. Speculation—which hardens the eyes, and wears the strained muscles always engaged in concealing the expression of natural emotion—is rife. Ruin, rapid and total, overtakes many. Genteel poverty asserts a physiognomy of its own, at once humble and haughty, timid and stubborn. There rises out of this ruin, and this competition, a creature who is known as “Brummagem”—a man who is neither very rich, nor very clever, nor very well behaved, but who pretends to be all three. “*Videri quam esse*” is the motto of smart brokers, sharp traders, and those who thrive by dexterity in avoiding legal offence. In the midst of this—when Tennyson, the hollow-templed, high-nosed, haughty poet, is writing “Maud,” to urge the

“Smooth-faced, snub-nosed rogues  
To leap from counter and till”—



war bursts, and England regenerates herself in the Crimea, and is fierily re-baptised on Indian plains. From the men of those latter days—from the men of the *last* half of this century, springs the Australian race. The gold discoveries attracted to this hemisphere some of the best nerve-power in England.

Already there existed in the Australias much sturdy Anglo-Saxon stuff. The officers and soldiers who, with their families, constituted the free population of early colonial days, were men of courage and daring. Many of the voluntary immigrants were at least equal to the best middle-class Englishman, while the banished population over which such men as Fians and Therry ruled, had at least the merit of being eminent in their several capacities, even though their capacities had been misapplied. Among the convicts were many men of great courage, great strength, great powers of brain, and in many instances, of astonishing talents for mechanics and the fine arts. It is only reasonable to expect that the children of such parents, transplanted to another atmosphere, dieted upon new foods, and restrained in their prime of life from sensual excess, should be at least *remarkable*.

But criminality is not reproductive. Being as abnormal a condition as skill in painting or playing is an abnormal condition, it cannot flourish beyond its generation. The genius of the thief buds, blossoms, and dies as surely as does the genius of the artist. But for immigration the convict continent would have been depopled. Immigration ensued, and what an immigration! The best bone and sinew of Cornwall, the best muscle of Yorkshire, the keenest brains of Cockneydom—Bathurst, Ballarat, Bendigo had them all. With them came also the daring spendthrift, the young cavalry officer who had lived too fast for the Jews, the younger son who had outrun his income. Barristers of good family and small practice, surgeons having all the Dublin Dissector in their heads and all the hospital experience of Paris in their hands, met each other over a windlass at Bathurst or in a drive at Ballarat. If there was plenty of muscle in the new land, there was no lack of blood. Put aside prejudice, and look at the Bench, the Bar, and the Church of this great continent. Look at the schools, libraries, and botanic gardens of Australia. Read the accounts of the boat-races, the cricket-matches, and say if our youth are not manly. Listen to the plaudits which greet a finished actor or a finely-gifted singer, and confess also that we have some taste and culture. Go into those parts of the country where the canker of trade has not yet penetrated, and mark the free hospitality, the generous kindness, the honest welcome which shall greet you. Sail up Sydney harbour, ride over a Queensland plain, watch the gathering of an Adelaide harvest, or mingle with the orderly crowd which



throngs to a Melbourne Cup-race, and deny, if you can, that there is here the making of a great nation. You do not deny it; but—. But what?

“There are many factors in the sum of a nation’s greatness—Religion, Polity, Commerce.”

Granted; but these are controllable. There is only one influence which we cannot escape, though we may modify it, and that is the influence of Physical Laws. Let us consider what climate the Australian nation will live in, and what food it will be prone to eat, and, having arrived at a distinct conclusion upon those two points, we can predict, with positive certainty, their religion, their polity, their commerce, and their appearance. You stare? Attend for a moment, and you will see that a proposition of Euclid is not clearer.

#### OUR CHILDREN.

The quality of a race of beings is determined by two things: food and climate. The measure of that quality is the measure of the success in the race’s incessant struggle to wrest nature to its own advantage. The history of a nation is the history of the influence of nature modified by man, and of man modified by the influence of nature. The highest practical civilisations have been those in which man came off victor in the contest, and employed the wind to drive his ships, the heat to work his engines, the cataract to turn his mills. The lowest, those in which nature reduced men to the condition of brutes—eating, drinking, and feeding. Given the price of the cheapest food in a country, and the average registration of the thermometer, and it is easy to return a fair general estimate of the national characteristics. I say a general estimate, because other causes—the height of mountains, the width of rivers, the vicinity of volcanoes, &c., induce particular results. But the intelligent mind, possessed of information on the two points of food and climate can confidently sum up, first, the bodily vigour; second, the mental vigour; third, the religion; fourth, the political constitution of a nation.

Before speculating on future events, let us apply our test to history. The climate of Egypt is hot and moist, the inundation of the Nile renders the soil wonderfully fertile, and food is extremely cheap and easily obtained. The climate of India is hot, and the inhabitants live for the most part on rice, which is cheap and usually obtained in abundance. The climate of Mexico is hot. Indian corn, which formed the staple of the food of the inhabitants, is astonishingly prolific and consequently cheap. Now, cheap food means in all cases cheap marriage, or in other words rapid reproduction of the species.



A hot climate means small expense in house-building, clothing, or furniture. A man sells his labour to meet his requirements, and in a hot country his requirements are few. In a hot country, therefore, wages are low, and the rapid increase of population renders human life of little value. The difference between the labourer and the employer of labour, then, is great, and from this difference comes tyranny on the one side and slavery on the other. The rich grow richer and the poor poorer. Wealth means leisure, and leisure means luxury and learning. Consequently we should expect to find that a nation living under these conditions would present the following characteristics: a poor and enslaved peasantry, a rich and luxurious aristocracy, who cultivate great learning and some taste for art.

Now, this condition answers precisely to the condition in which Antony found Egypt, Warren Hastings found India, and Cortez found Mexico. In each place the nobles lived in incredible luxury, and the poor in incredible misery. The learning of each nation was the marvel of its successors. The expenditure of human life in each was terrible. Human beings were not only sacrificed in thousands for the building of the gigantic temples common to each country, but absolutely slaughtered like sheep to celebrate the triumphs of a conqueror, or appease the anger of a god. It is remarkable that the religion of each nation was bloodthirsty and full of terror. Siva the Destroyer, Typhon the Betrayer, Kitzpolchi God of the Smoking Hearts, alike demanded offerings of blood and tears. It is quite easy to account for this. Each nation grew up among scenes of natural grandeur, and a witness to the almost daily performance of the most majestic operations of Nature. The hurricane, the storm, the simoom, the flood, the earthquake—all were familiar to their minds; and poets were created by the influence of the scenery which they described. Men having, by the expenditure of their own blood, modified Nature with aqueducts, canals, and roads, Nature modified their struggles for freedom by the imposition of a terrible superstition which darkened all their days.

It is an absolute fact that religion is, in all cases, a matter of diet and climate. The Greek, with pure air, light soil, and placid scenery, invented an exquisite anthropomorphism, in which he deified all his own attributes. The Egyptian, the Mexican, and the dweller by the Ganges invented a cruel and monstrous creed of torture and death. The influence of climate was so strong upon the ancient Jews that they were perpetually relapsing from theism into the congenial cruelties of Moloch and Astarte. Remove them into another country, and history has no record of a people—save, perhaps, the modern pagans of our universities—more devotedly attached to the purest form of



intelligent adoration of the Almighty. The Christian faith, transported to the Libyan deserts or the rocks of Spain, became burdened with horrors and oppressed with saint-worship. The ferocious African's Mumbo Jumbo, the West Indian's Debbel-debbel, are merely the products of climate and the result of a dietary scale. Cabanis says that religious emotion is secreted by the smaller intestines. Men "think they are pious when they are only bilious." Men who habitually eat non-nitrogenous substances and pay little attention to the state of their bowels are always prone to gloomy piety. This is the reason why Scotch are usually inclined to religion.

Now let us consider what climate and food will do for Australians.

In the first place, we must remember that the Australasian nation will have an empire of many climates, for it will range from Singapore and Malacca in the north to New Zealand in the south. All varieties of temperature will be traversed by the railroad traveller of 1977. The enormous area of Australia, that circle whose circumference is the sea, and whose centre is a desert, is a strong reason against federation. It is more than likely that what should be the Australian Empire will be cut in half by a line drawn through the centre of the continent. All above this line—Queensland, the Malaccas, New Guinea, and the parts adjacent—will evolve a luxurious and stupendous civilisation only removed from that of Egypt and Mexico by the measure of the remembrance of European democracy. All beneath the line will be a Republic, having the mean climate, and, in consequence, the development of Greece. The intellectual capital of this Republic will be in Victoria. The fashionable and luxurious capital on the shore of Sydney Harbour. The governing capital in New Zealand.

The inhabitants of this Republic are easily described. The soil is for the most part deficient in lime, hence the bones of the autochthones will be long and soft. The boys will be tall and slender—like cornstalks. It will be rare to find girls with white and sound teeth. A small pelvis is the natural result of small bones, and a small pelvis means a sickly mother and stunted children. Bad teeth mean bad digestion, and bad digestion means melancholy. The Australians will be a fretful, clever, perverse, irritable race. The climate breeds a desire for out-of-door exercise. Men will transact their business under verandahs, and make appointments at the corners of streets. The evening stroll will be an institution. Fashion and wealth will seek to display themselves out of doors. Hence domesticity will be put away. The "hearth" of the Northerner, the "fireside" of Burns's Cotter, will be unknown. The boys, brought up outside their homes' four walls, will easily learn to roam, and as they conquer difficulties



for themselves will learn to care little for their parents. The Australasians will be selfish, self-reliant, ready in resource, prone to wander, caring little for home ties. Mercenary marriage will be frequent, and the hotel system of America will be much favoured. The Australasians will be large meat-eaters, and meat-eaters require more stimulants than vegetarians. The present custom of drinking alcohol to excess—favoured alike by dietary scale and by carnivorous practices—will continue. All carnivora are rash, gloomy, given to violences. Vegetarians live at a lower level of health, but are calmer and happier. Red Radicals are for the most part meat-eaters. A vegetarian—Shelley *exceptio quæ probat regulam*—is a Conservative. Fish-eaters are invariably moderate Whigs. The Australasians will be content with nothing short of a turbulent democracy.

There is plenty of oxygen in Australian air, and our Australasians will have capacious chests also—*ceteris paribus*, large nostrils. The climate is unfavourable to the development of a strumous diathesis; therefore, we cannot expect men of genius unless we beget them by frequent intermarriage. Genius is to the physiologist but another form of scrofula, and to call a man a poet is to physiologically insult the mother who bore him. When Mr. Edmund Yates termed one of his acquaintances a “scrofulous Scotch poet,” he intended to be personal. He was merely tautological. It may be accepted as an axiom, that there has never existed a man of genius who was not strumous. Take the list from Julius Cæsar to Napoleon, or from Job to Keats, and point out one great *mind* that existed in a non-strumous body. The Australasians will be freed from the highest burden of intellectual development.

For their faces. The sun beating on the face closes the eyes, puckers the cheeks, and contracts the muscles of the orbit. Our children will have deep-set eyes with overhanging brows; the lower eyelid will not melt into the cheek, but will stand out *en profile*, clear and well defined. This, though it may add to character, takes away from beauty. There will be necessarily a strong development of the line leading from nostril to mouth. The curve between the centre of the upper lip and the angle of the mouth will be intensified; hence, the upper lip will be shortened, and the whole mouth made fleshy and sensual. The custom of meat-eating will square the jaw and render the hair coarse but plentiful. The Australasian will be a square-headed, masterful man, with full temples, plenty of beard, a keen eye, a stern and yet sensual mouth. His teeth will be bad, and his lungs good. He will suffer from liver disease, and become prematurely bald; average duration of life in the unmarried, fifty-nine; in the married, sixty-five and a decimal.



The conclusion of all this is, therefore, that in another hundred years the average Australasian will be a tall, coarse, strong-jawed, greedy, pushing, talented man, excelling in swimming and horsemanship. His religion will be a form of Presbyterianism; his national policy a Democracy tempered by the rate of exchange. His wife will be a thin, narrow woman, very fond of dress and idleness, caring little for her children, but without sufficient brain power to sin with zest. In five hundred years—unless recruited from foreign nations—the breed will be wholly extinct; but in that five hundred years it will have changed the face of nature, and swallowed up all our contemporary civilisation.

It is, however—perhaps fortunately—impossible that we shall live to see this stupendous climax.

## CHAPTERS FROM "THE STUDENTS' MANUAL OF MAGNETISM."

TRANSLATED FROM THE FRENCH OF BARON DU POTET.

(Continued from p. 126.)

### *On the Co-operation of the Doctor and the Magnetiser.*

This is a delicate question of which to treat at the present day, on account of the existing state of belief. It is, in fact, difficult to find a doctor who looks favourably upon magnetism, and even if one could be found favourably disposed towards it, would he be prepared to renounce his principles? Would he be prepared to reduce the character which he plays to one of passive expectation? And if remedies are judged necessary, would he consent to act in concert with the magnetiser? Is it not to be feared that the already tempest-tossed vessel will be steered with unsteady hand, hither and thither, and at last be abandoned to the fury of the billows? Here there must be a distinct understanding; the magnetiser must not be simply tolerated by the doctor, thus allowing conflicting passions to enter into antagonism with each other. How can a co-operation be established if it is rejected by the doctor? and how can both work together towards the attainment of the same end, if, for instance, such cases as the following occur?

I was treating a young child for a nervous disorder, under the direction of a physician, my treatment being approved by him. He believed in magnetism, but he thought it necessary to administer a purgative to the patient. I considered any medicine unnecessary; the child was going on well, the convulsions having ceased. A discussion arose on the subject, and we could not come to an agreement. The parents of the child were of my opinion. But what was the course of conduct pursued by the doctor? He went away and prepared a purgative containing calomel. He returned during my



absence, and forced the child to swallow the contents of the bottle with which he had provided himself, in consequence of which the convulsions returned. What could I do in such a case? Reason prompted me to retire, but my conscience refused to sanction such a proceeding; and, as humanity convinced me that it was my duty to persevere, I yielded. Ought I to be angry with a man who was honest, who believed in magnetism, but also in the efficacy of the means which he himself suggested?

Without giving other instances of the same kind, it must be evident how many difficulties may arise from two wills, and two systems, placed in opposition; one must finally give way to the other, but what an amount of virtue and philosophy must be required to yield without a murmur!

The existence of magnetism is more frequently allowed than formerly; one may confess belief in it without fear of ridicule; but it has not always been so, and it will be long before the difficulties to which I refer will disappear. Even when the magnetic agent shall be recognised by the faculty as possessing therapeutic properties, the doctors will not give up their patients to the magnetisers. There will be a struggle—there will be open or secret war. It would only display a want of knowledge of human nature to judge otherwise. Time will no doubt do away with these prejudices; there will then be only individual opposition to encounter; but many sick people who might have been cured will perish before there is a cordial co-operation between the doctors and the magnetisers.

We will close this digression by quoting the words of Puységur:—"Truth can never be divested of its rights, and confusion is always the lot of those who, from a dishonest motive, refuse to recognise it. A truth remains a truth, and sooner or later its light pierces the clouds of error, of ignorance, and of envy. If the science of animal magnetism was only a system, I should feel my inability to advocate its general adoption. A system is often only the fruit of an excited imagination, the success of which depends upon the amount of eloquence possessed by its author; but magnetism is a means which lies within the reach of men of the meanest capacity; all have the power of making use of it; for this sole reason—that they are men."

#### DIFFICULTIES TO BE ENCOUNTERED IN MAGNETISING SUCCESSFULLY.

Among many difficulties, I will here treat of only one, but it is a stupendous one, and has caused me much perplexity. It is this: I have already said that a cure is never effected without the development of some critical changes in the organisation of the patient—you being the only person who understands and appreciates these changes. Those who surround the patient look upon them merely as an aggravation of the malady. Your reasoning will have no effect upon prejudiced or timorous persons. The patient was entrusted to you as a last resource, and you will be liable to dismissal because you cause a development of those symptoms which alone can save him. What authority have you? None whatever. You are an empiric, and you



will be treated as such. You must learn how to inspire other people with your own belief; your explanations must be simple, clear, and comprehensible, and—more important still—your prognostications must always prove correct.

To make my meaning more clear, I give the following example, which I have selected from a hundred similar ones :—

A patient came to my house to seek what relief my art could afford him; he was suffering from a severe attack of gout, was supported by two servants, his legs were swelled, and his whole body full of humours. He had long been in this state, and had sought the aid of science in vain. I undertook his case, and a change in his condition soon manifested itself: he grew visibly weaker; his friends supposed him to be dying, and gathered round him in the greatest alarm, all anxious to consult a new doctor and to dismiss me. The patient was a man of good fortune, and consequently of some importance in the town. The doctors who had previously attended him were on the watch; they found fault with my treatment, and judging by the reports which reached them, they predicted the approaching end of him who had entrusted the care of his life to me. I forbade the use of medicine, resolutely declaring that I would instantly quit the patient if any drug whatsoever was administered to him.

Profuse perspirations succeeded, his weakness increased, and the fears of his friends were redoubled; my efforts to relieve the patient were now regarded with horror. I heard on all sides: "He is killing him; he is murdering him with his magnetism." I confess that at times I felt discouraged, although I was convinced that the treatment was making satisfactory progress, and in case the patient did not lose heart I hoped to be able to continue it, as I had succeeded in inspiring him with much of my own confidence; every time, however, that I visited him while he continued in this feeble state, I was obliged to confront the angry looks of his family. The crisis was at length reached. The patient, who, according to my advice, had swallowed nothing but water, was able to take some chicken-broth and other light nourishment; his strength returned, and he was saved. He had lost more than half his weight, but he could walk without assistance. It was a miracle of magnetism, but what trouble and anxiety it had caused the author of it.

Perhaps you will think that I was repaid by gratitude, and that the success of my efforts was openly acknowledged? Not at all; except by the patient, who was aware of what I had done for him. I was even pursued by the secret but vindictive hatred of certain persons who had been wrong in their prognostications. What a happiness for them had the patient only died under the hands of the magnetiser.

You see that the poor magnetiser is obliged to steer his vessel amidst the most dangerous reefs, which he points out to the navigators who may follow him. Will they be grateful to him for the information which he gives them? It is of no consequence whether they are or not.

Do not lose sight of this important fact. Magnetism produces



favourable crises; you must learn to know them in order to distinguish them from the unfavourable changes which occur in every serious illness. You must give your opinion, promise a favourable issue if you believe in it yourself, or in a contrary case, point out that the disease, which is stronger than you are, is drawing the life of the patient to a close. Do not flatter yourself that you are strong and powerful enough to be able to perform impossibilities, for Death has often pronounced his decree—life is fading away—and when you think to hold and fix it, you find nothing left but an inanimate corpse, over which your magnetism has no power.

### *Crises.*

Remember that in your hands magnetism may become an instrument which rivals Nature, inasmuch as it carries into the animal economy a disturbance, favourable to the return of crises which ordinary medical science cannot produce. Hippocrates himself despaired of it. This great man discovered and has ably described the course of crises in acute diseases, but there he stopped. In these diseases he says Nature alone can cure. The power is hers; she herself does the greater part of the work: all you can do is to assist her. But in chronic maladies he sees that his art is useless; in fact, the periodical returns are here too varied and too uncertain to be understood, too long and too complicated to be studied, too feeble to be perceived. While Nature is making feeble and ineffectual efforts in the direction of life, she adds each day another step to those which she has already taken on the road to death. Ever drooping and languishing, we know ourselves to be dying without knowing how we die. Thus in these melancholy and only too frequent cases, Hippocrates expressly forbade remedies and merely prescribed diet, exercise, baths, frictions, and patience. Since his death the science of medicine has not advanced. By his discovery Mesmer carried the system of crises into the field of chronic maladies which Hippocrates had despaired of doing. We see in reality that the magnetic agent, by reinforcing Nature, accelerates and redoubles her efforts, and also the power of resuming a progressive march on the road to health.

We may therefore affirm with certainty, that the most important result of magnetism as a means of treatment, is the constant action of the force which preserves, upon the force which destroys.

### A WORD UPON THE HEALING OF WOUNDS.

It is important that you should know that many wounds considered incurable, and for that reason supposed to require an operation, may be ameliorated, and even cured, simply by the action of vital force when, as in any other malady, you have magnetised.

Magnetic virtue makes itself felt upon wounds of an obstinate nature and long standing. The necessary excitant is brought to bear upon them, and this produces an increase of sensitiveness without which nothing can be done. Do not, then, despair before making a trial of your powers. What appears to us serious and even incurable



sometimes yields more promptly than an apparently more trivial ailment.

How many dreadful diseases have been pronounced incurable: the instruments have been prepared, and the consent of the patient only awaited, in order to commence the operation, when a brief delay, a fortunate change of treatment, have been sufficient to alter the aspect of things and give the lie to melancholy prognostications.

#### CAN YOU SUBSTITUTE ANOTHER MAGNETISER FOR YOURSELF?

There are very few cases in which, without injury to the patient, he may be handed over to the care of another. This is a fact which has been observed from the first. Mesmer—and Puységur, following his example—took endless precautions: they magnetised those who were to replace them, in order to communicate to them the same tone of movement which they themselves had.

This precaution, when the thoughts which animated the two magnetisers were identical, might suffice; for the action, by this means rendered uniform, varied in a very slight degree, though sufficiently to be perceived by the patients. But in the present day, when everyone has his own ideas, his own system, his own doctrine—when everyone believes himself as great as, and even greater than, his teachers, and occupies himself in searching out phenomena which were unknown to them—it cannot be the same, and this change of actions affects the patient in a different way.

“This,” you will say, “is contrary to the principles which you have established. You said that magnetism was subject to the rules of other physical agents; that it had a fixed action; and that, whatever might be the belief or the ideas of those who practised it, the results were identical.”

Being one day summoned to the Academy of Medicine, in order to magnetise some sick people in the presence of several members of this body, instead of patients I found only these gentlemen—Academicians who obliged me to subject them to the action of magnetism. I ventured to observe to them that I had expected to operate upon sick people. “But we are all sick,” they answered, smiling ironically. Out of patience at what I considered ill-timed pleasantry, I made a resolution that I would torment to the utmost of my power the first of them who should be sensible to my action. I was, I must confess, animated by anything but benevolent intentions. The person whom I magnetised in this frame of mind was a celebrated physician, M. Itard. I very soon placed him in a condition which made his colleagues serious enough, and left him so. But what was my astonishment when the next day he came to see me, assured me that I had done him a great deal of good; that an intestinal affection of long standing had suddenly left him; and that he had come on foot—he who for a long time had only been able to go out in a carriage. I congratulated him, confessing at the same time that this had not been my intention, and that I had only wished to make him feel strongly the magnetic action.



Several times since, people have told me that, having been magnetised merely with a view of experimenting, a favourable change in their ordinary state of health has taken place. A young man suffering from *tic-doloureux* was relieved in this manner.

I have placed this example before you in order to show the difference in the cases, to point out to you that here I acted alone, whereas in a treatment already commenced the action is complex; the magnetism has taken effect, an amelioration has been produced; and this, under the influence of ideas and intentions which, all at once ceasing to be the same, must necessarily produce a change. In the first place the magnetisation will be different: and, as the new magnetiser does not follow in the steps of his predecessor, the critical working which was taking place in the organs will be counteracted, if not altogether interrupted.

But without entering into any further explanations, I will say that notwithstanding the similarity of physical effects easy to observe which are developed in the same individual under the influence of different actions, the benefit resulting from them is not identical, and that one ought to take account of this difference which is sometimes great; still in a general way one takes the place of one's predecessor by degrees, and the treatment continues its course.

You observe, then, that it is only very cautiously, and when there is an absolute necessity for it, that anyone should be substituted for yourself: the wiser course would be not to commence the treatment. Remember also that every lucid somnambulist loses his clearness when he allows himself to be magnetised by several different people, although his sleep appears in every respect the same. A new master has entered the domicile; his commands are obeyed, but they being different from those of his predecessor, disorder reigns in the establishment. It is the same with the organs of the body—they obey more readily the impulsions of a permanent will, and their play is more regular and more perfect.

Here an opportunity presents itself of pointing out the advantages to be derived from

### *The Employment of Magnetised Objects.*

Being sometimes obliged to miss a magnetisation, I have often left with, or sent to, the patient a magnetised object, to be applied at the hour when he was accustomed to be magnetised. Nothing can undoubtedly replace a direct magnetisation, but the practice which I have just indicated prevents the want of it being too much felt. The impetus already given continues—more feebly it is true, but even if feeble, it is very important, for the patient expects you, and if you do not arrive, he becomes irritable and uneasy; now, as this irritability is hurtful to him, you ought to prevent its occurrence by the method which I have indicated.

Water is the most useful of all magnetised objects, therefore you may leave some with your patient; but you yourself are absolutely necessary; you are his daily bread. From your organisation he



draws the strength which is wanting to him, and when the connection between your two nervous systems is well established, your approach is felt. Whether you have or have not the wish and the desire to act, the action takes place by a secret attraction which exists between him and you. He robs you without your knowledge ; and it has often happened that, after being with sick people whom I had no intention of magnetising, I have been as exhausted as if I had exerted all my powers.

How many doctors thus magnetise their patients without suspecting it ! And, in society, how many magnetic actions take place without the knowledge of those who practise them. May God long preserve such a mystery as this ! We, who cultivate science for its own sake, sometimes fear to discover too much, and to say too much.

*Can one Magnetise and Cure Oneself?*

Undoubtedly. Open the "Annals of Magnetism," page 255, vol. 2, M. Birot there says : "I had for a year an acute pain in the right knee, the long continuation of which caused me some uneasiness ; I magnetised myself for some days, and the pain disappeared."

I might, perhaps, have omitted this extract, which I have selected from a number of similar ones, for every magnetiser who has had any experience, will have tried the magnetic passes upon himself by way of experiment, and will tell you that he has derived benefit from the agent which he himself emitted. This appears singular and inexplicable, but it is nevertheless true, and without quoting the ecstasies of India, who understand perfectly how to place themselves in a magnetic trance without the assistance of anyone, I have seen two examples of this automagnetisation, upon the results of which I had, up to that time, been in doubt.

*There exists as much Susceptibility to Somnambulism in Men as in Women.*

The contrary idea has been perpetuated, each new work containing a paragraph in which this absolutely false assertion is carefully repeated. It is not true that women are more susceptible to magnetism than men ; it is not true that there are more somnambulists among them.

The error to which I allude has arisen from the following cause, that the magnetisers, being influenced by ungrounded opinions, have tried their experiments almost exclusively upon women, and have rarely, or never, acted upon men. How can they establish this difference if they have never experimented and compared ?

The consequence of this false judgment, of this want of observation, or, to speak more strongly, of this prejudice, is that magnetisers conduce to lead public opinion astray.

But this treatise is not in any way a controversial work, and I have no desire to set right everything which appears to me erroneous in the works or opinions of other magnetisers. It is, besides, so



common to see absurd and improbable propositions advanced, that, after a time, one pays no attention to them.

Follow, then, the only rational course : study each fact, and make a note of it for the sake of comparison. What is it you wish to learn ? The law which presides over the development of phenomena. Well, you will scarcely find it noticed in books, it is to Nature that you must appeal.

*Belief in Magnetism is Indifferent to the Success of the Operation.*

We must repeat that the magnetic agent has properties peculiar to itself, without which it would have no existence ; and it is by virtue of these properties that it produces the series of phenomena which we have endeavoured to describe in this work. In this respect it is in every way similar to the various natural agents. Thus, opium produces sleep, wine intoxication, an emetic vomiting ; oxygen increases the circulation and perturbs the moral faculties, and this independently of the belief of him who is subjected to their action. It is the same thing in magnetism.

A good state of health does not in any way preclude the susceptibility to magnetism—I even think that it is favourable to the prompt development of the phenomena. I have succeeded in such a great number of cases of this kind that if I had to choose a person to experiment upon I should give the preference to one in good health, for in the case of sick people it is often only after having produced a sort of factitious vitality that the effects of magnetism and the magnetic sleep are manifested. Influenced by the opinions of the magnetisers, I might at the commencement of my career have thought as they did, but I now see they were mistaken as to the facts which I have mentioned.

To establish a *rappor*t by contact is not in any way necessary. Touching the thumbs, placing the hands on the shoulders and passing them down the arms, pressing your knees against those of the person operated upon, are proceedings which constitute a bad method requiring reform. It signifies little if it originated with Puységur or Deleuze if it is bad.

By these procedures the greater part of the magnetic agent emitted is cast to the winds. Indeed, when your hands are no longer directed to the larger surfaces of the body you cease to act upon them : the rubbing which you practise upon the shoulders and arms is nothing more than magnetic friction. The thumbs which you hold in your hands, although they are good conductors, force the magnetic agent to travel by the longest road. A demonstration upon a sensitive subject gives the most evident proof which can be obtained of what I tell you here.

There is no necessity either for that rolling of the eyes which for an instant gives you the appearance of a lunatic. You say you exercise a species of fascination. No : you create alarm, you cause the mind to be troubled, you produce uneasiness, and this irregular action is never efficacious. It only gives rise to doubts as to the



existence of magnetism—for anyone may by these procedures, and without the slightest knowledge of magnetism, throw susceptible females into a kind of delirium, or at any rate give them spasms or convulsions.

Is this what we have been teaching for thirty years? Shall we never succeed in making ourselves understood? Will you continue to be like the warriors of a bygone age, who wished to keep their old flint guns, and obstinately rejected the improved weapons which were placed in their hands?

#### THEORIES OF MAGNETISERS.

We suppose, they say, that all magnetic phenomena belong to the nervous system, all the functions of which are not yet known to us—that it is to a modification, to an extension of this system and its properties, to which we ought to attribute all the effects produced.

In the present state of science everything leads to the conclusion that the brain is an organ which secretes a peculiar substance, the principal property of which is to transmit or receive will and sensation. This substance, whatever it may be, appears to circulate in the nerves, some of which are devoted to movement (at will): they spring from the encephalus or its dependencies and pass to the extremities; the others belong to sensation and follow the same direction—the first are active, the second passive. These propositions at the present time may be regarded as proved.

When we are about to move any member of our bodies, our brain transmits to the muscle destined to execute this movement a certain quantity of nervous agent which determines the muscular contraction. This transmission is made by means of a nerve known to anatomists, and if we cut it or pass a ligature tightly over it, it becomes impossible to us to execute the movement—the nerve is paralysed. The same phenomena take place in the nerves of sensation: if they are destroyed, feeling is annihilated in the part from whence they spring. These facts, known from time immemorial, are incontestable and generally admitted. They had given rise to the idea that the function of innervation was a true circulation. The labours of Bognos seem to prove materially what had previously been established by reasoning.

But of what nature is this agent? The researches of Messieurs Prevost and Dumas give us reason to believe that this agent possesses a close analogy to the electric fluid. These physiologists have demonstrated that muscular contraction was the result of a veritable electric shock.

The learned Professor Bécларd assures us that having laid bare and divided a tolerably large nerve in a living animal, he had often caused a deviation of the magnetic needle by bringing this nerve into contact with the needle.

Everyone knows that galvanism causes the muscles which are submitted to its action to contract. It is well known how Galvani and Volta saw and proved the existence of a peculiar fluid, which was afterwards recognised to be the same as electricity.



It is also known that certain animals possess the singular property of secreting, by means of an apparatus provided by nature for that purpose, a great quantity of electric fluid, with which they give strong shocks—shocks sometimes so violent that they are able at a great distance to kill fish or even men.

The electric eel, the tetraodon, and many others, possess this faculty. The quantity and quality of their electric fluid has been measured by means of very sensitive electroscopes and electrometers. It has been ascertained that this fluid was secreted by the brain of these animals, since on removing either the brain or the nerves supplied by it, the electrical effects were destroyed—a result not observable on removing the organs of circulation.

Thus it has been clearly demonstrated that in some animals, the brain secretes electric fluid; that muscular contraction may be caused by an electric excitant, &c.,—considerations which render it extremely probable that the nervous agent is electric fluid, or a fluid bearing a close analogy to it.

All these probabilities may have a powerful influence in inducing us to admit the circulation of a nervous agent, the cause of magnetic phenomena.

In fact, this agent with us does not remain either in the muscles or the skin, but is projected outwards with a certain amount of force and thus forms a true nervous atmosphere, a sphere of activity absolutely identical to that of galvanised bodies. This opinion was that held by the most able physiologists of modern times, Reil, Autenrieth, and M. de Humboldt.

Viewed in this light all magnetic phenomena seem to us susceptible of a plausible explanation.

The active nervous atmosphere of the magnetiser, no doubt increased by the impulse given to it by his will, is mingled and placed *en rapport* with the passive nervous atmosphere of the person magnetised, and augments this last to such a degree, that in certain cases there seems to be a veritable saturation of the nervous system, liable, when there is an excess of this fluid, to produce the shocks sometimes experienced by magnetised persons.

The nervous system of the person magnetised being thus favourably influenced by reason of its peculiar sensitiveness, would explain all the perturbations observed, and would satisfactorily account for the communication of the desires, the will, and even the thoughts of the magnetiser. These desires, this will, being actions of the brain, are transmitted from the brain by means of the nerves to all parts of the body, and even beyond it.

It is only to satisfy the minds of my readers that I here introduce this shadow of a theory; the time has not yet come to explain magnetism: no human being knows what it is, and no mortal can raise the veil which conceals it from the eye of our intelligence. We now materialise this agent by seizing it in its law of circulation; but the nature of it escapes us. Let it once be admitted that created wills possess a power of acting upon bodies and impressing them in various ways, and it will be impossible to assign any limits to magnetic power.



Let us consider a little the difficulties presented by the study of this human force. This invisible cause of magnetic effects passes through all natural bodies: that is to say, all bodies are conductors of this fluid. It may incorporate itself in all natural bodies: that is to say, every body is capable of receiving this fluid, of retaining it, and by means of it of producing magnetic effects.

The bond of union between the animal magnetic fluid and the bodies which have received it, is so close, that no chemical nor physical force is able to destroy it.

Chemicals and fire have no effect whatever upon the animal magnetic fluid itself. These propositions have been strengthened by some experiments.

A magnetised vitreous body which had in a few moments produced the magnetic sleep in a somnambulist, was washed with water and rubbed with linen, then presented again to the same person. He fell asleep in half a minute.

A magnetised glass, washed with ammonia, produced somnambulism in a quarter of a minute.

The same glass was immersed in steaming nitric acid; after remaining in it five minutes, it was placed in an earthen vessel full of water; the young somnambulist took it out of this water, and fell asleep directly it touched his hands.

The same experiment was repeated with concentrated sulphuric acid. The result was absolutely identical.

In these experiments no chemical re-agent was able to destroy the magnetic power of the magnetised glass; it appears that this power does not attach itself, like odours, electricity, and other similar fluids, to the surface of the bodies, but that it penetrates their interior. The following experiment confirms this conclusion.

A large piston of magnetised marble was completely immersed in muriatic acid, till the acid had consumed nearly half the marble; it was then taken out, washed, and presented to a somnambulist; he fell asleep as quickly as when he had touched the whole piece of marble.

The other imponderable and expansive fluids stand in such a relation to each other, that on one of them being attached to a solid body, it can only be separated from it by the aid of another expansive fluid. For instance, the mineral magnetic fluid is expelled from the natural or artificial magnet by ignition and by the electric shock, and combustion changes entirely all relation of bodies with expansive fluids, such as their conductive properties, their capaciousness, &c. Therefore, in order to study the nature of the magnetic fluid, one must necessarily expose magnetised bodies to different degrees of temperature, and even to combustion.

For this purpose magnetised wax, resin, sulphur, and brass have been melted, and after having been poured into cylindrical moulds of a form similar to their original one, their effect upon somnambulists was tried, when no difference in the result before or after the melting could be perceived; the somnambulists fell asleep as soon as they took them into their hands.



A rod of magnetised iron was placed in the fire and made red hot ; in this state it was plunged into a cup of water, and then presented to a young man, who fell asleep immediately upon receiving it into his hands.

A large sheet of paper, twisted up and magnetised, was burnt upon an earthen plate. The charcoal and the ashes which remained upon the plate were presented to a somnambulist, who took as much as he could grasp into his hand, and fell asleep in a few moments.

Several counter proofs were tried with objects which were continually passing through people's hands ; they were placed on his knees and in his hands, but he was not in any way affected.

Magnetised objects, carefully preserved, produced identical effects at the end of six months ; they seemed to have lost nothing of their magnetic power.

There exists, then, an active principle which resists all mechanical, physical, and chemical force, which attaches itself to bodies by indissoluble ties, which penetrates their substance like a spiritual being, and triumphs even over the action of fire. But its indubitable existence, proved by the effect it produces, is not revealed to the eyes of man in his ordinary state ; it is the expansion of our personality brought about by magnetic *rapport*, which alone enables us to see and feel this principle of life—which receives its vigour from the will of man, and acts with an energy proportioned to the force of this will. When it acts with great power it is like lightning, and seems to annihilate life.

The greatness of the explanation ought to be proportioned to the sublimity of the problem. The whole physical and organic order of beings, and all the principles established with regard to them, cannot solve these problems of animal magnetism, which properly belong to psychology, in which science neither physical nor chemical experiments are of any avail.

I cut these observations short, as otherwise I should be deviating too widely from the line which I have traced out for myself. I must not forget that my task is simply to give rules ; my chief aim being the rational application of magnetism to the treatment of disease.

(To be continued.)



## THE ORDER OF SPIRITUAL TEACHERS.

No. 1 SCHOOL, 15, SOUTHAMPTON ROW.

## MIND AND SOUL.

“Endowed with intellectual sense and soul.”—*Shakespeare.*

At the weekly meeting held on Thursday evening, May 23, a desultory conversation led to a very instructive result. One Teacher remarked that he heard a Spiritualist declare that some people had no souls, and would not therefore be immortal after death. This led to the reading of the views of Max Müller upon the origin of certain religious notions, as recorded in his third lecture at Westminster on “The Origin and Growth of Religion.” He says in this, “Unless we are told whether the Benin negroes mean by soul, *anima* the breath, or *animus* the thinking principle, or the soul as the seat of passions and desires—whether they deem it material or immaterial, mortal or immortal—we are taught nothing by being told that they look upon a shadow, or a bird, or a shooting-star as their soul. But it is quite another thing when ethnological psychology teaches us how, *e. g.* by watching the shadows stay with us by day and leave us at night, the idea of a second self arose; how the idea blending with another—namely, that of breath lasting through life and quitting us at death—the conception of a living soul separate from the body was slowly elaborated. There we catch in the act a real transition from seen to unseen, from material to immaterial. But what people in that primitive stage thought was, not that their souls are shadows, but that after death their breath would dwell in something like the shadows that follow them during life.”

The Chief Monitor, J. Burns, in his observations, said: It is important to consider what is meant by “soul.” It is a common saying that a certain person who is deficient in intellect has no brains; yet no doubt, if his skull were opened a pulpy mass would be found therein, which would be regarded as brains, however deficient in function. The term has to be taken figuratively, and not literally; and if this method is applied to the soul, it might, with as much consistency, be stated that certain people had no souls, as that certain others had no brains. If brainless and soulless people, then, exist in the mortal state, why not after death? The human being is composed of two distinct departments which may be generically recognised as brain and soul. The brain is the thinking principle, the *animus*, masculine, materialistic, and consists of the phrenological organs and faculties by which man determines his relations to the surrounding world. Now these brain faculties are of a most imperfect and faulty kind; they act pretty much in accordance with circumstances, being



either too much excited or retarded in their action, leading to impulse or reserve, incompatible with a wise and just appreciation of the true line of wisdom: in short, they are finite and human. There is, however, another power within humanity, that which is entirely beyond the control of his will, and which acts while he is asleep, or when an infant, just as perfectly as in the case of the most experienced philosopher. These involuntary powers operate within the chest, and direct the processes of organic life; they never err, but do their work with absolute perfection. Man may surround them by inappropriate conditions, may give the lungs foul air to breathe, the stomach narcotics or improper food, the muscles too little exercise, &c.; but under all circumstances, favourable or unfavourable, the life-principle exerts itself with undeviating wisdom, and makes the best of all conditions that may be presented to it. I regard this *anima*, the feminine power within man, signified by breath (which it is said God breathed into man's nostrils), as the creative principle effecting its divine ends through man's organism. It is God within us, and it is through this relationship that we are created in the image of the Father. How perfectly all its works are effected! The new-born babe is the effort of this Divine skill, and yet no artist could surpass its model, and no artificer could approach the intricate perfection of its construction; however ignorant or unconscious of the matter brain may be in the mother, this work is done with equal perfection, if circumstances favour the process.

The people who applied those words in the Latin—*animus*, mind, will, the rational principle (with its masculine form), and *anima*, breath, life, soul (used also as a term of endearment, and expressed in the feminine), must have had a deep insight into the secrets of psychological science. A paper on their views would be instructive. Will some scholarly friend kindly undertake the task?

There is, therefore, in man an imperfect and faulty principle of action which is human, and an absolutely perfect and divine principle of action—God manifest in the flesh. The one is mind and the other is soul; and the latter, being the builder of the mortal body, is also, no doubt, the builder of the spiritual body, and the amplifier of that phenomenal stage of being in which immortal man will manifest himself after the decease of the physical body. The brain-organs have really no power to express mind further than this basic under-current will enable them. Our phrenological organs are alike from day to day, and yet we know with how much more outflow of expression and correctness of thought we can deliver ourselves at one time than at another. It is this chest power that supplies utterance. The brain organs only differentiate the phenomena of expression.



In mediumship there appears to be two methods of control. The abnormal method more particularly affects the brain-organs, either by a suspension of personal consciousness, by which ideas quite foreign to the medium are expressed through the brain, or by impression, which operates on the brain-faculties causing the transitory utterance of thoughts which are not native to the mind through which they are given. The normal method of inspiration or mediumship is through the soul: the brain-organs are allowed to remain free and normal, and act out that form of thought which is peculiar to the individuality of the speaker. The accession of power is in the soul, by the expansion of which the brain is fed with a substratum of thought-power, which it manipulates in accordance with its idiosyncracies. Thus it is that while the abnormal medium has little or no individuality, the normal medium has a most striking and expansive individuality, because the inspirational power which is thrown into his being tends to enrich and elaborate his individuality by being expressed through his brain-organs in a normal state, which cultivates and enlarges the peculiarities of his character, rendering him a focal centre of mental phenomena. As an instance, may be cited the career of such men as Robert Burns, and I am led to believe that his control as a spirit is more directly operative upon the soul than on the brain organs. Since my last illness I have, under favourable circumstances, felt the influence of "Robert Burns," and it is very peculiar. He does not at all affect the intellect so as to induce certain forms of thought or distinct ideas; thus the personality of the man he leaves free and untrammelled. His influence is manifest in the emotions, or what would be popularly styled the heart. A feeling of largeness and elevation of sentiment of a joyous religio-humanitarian cast is evoked, accompanied or followed by a depth of feeling and tenderness of expression and elocutionary power; the tone of the voice is altered, and a poetical, musical accomplishment for the time being suffuses the faculties of intellectual expression. This may be to some extent a manipulation of certain brain-organs, though not those of didactic thought; but may not this control of the phrenological organs of expression be of a normal kind, proceeding from the welling up of the soul-element from within rather than the super-impression of a foreign thought-element from without?

During my tour in the north in autumn last, I had a very peculiar experience. On my return to the south I travelled by the Midland train from Glasgow by Kilmarnock through Ayrshire, down the Nith to Dumfries, and thence to Carlisle. It was a lovely day during the first week in December, and I thought I would have as good a glimpse of "the land of Burns" as the rapid mode of transit by rail would



permit; but besides being the Burns country, southern Ayrshire was the seat of Robert Bruce, my spirit-guide, many of whose early exploits were enacted on the Ayrshire coast and through the adjacent country. Nothing particular occurred to me till the train was moving out of Kilmarnock, and just as we neared the outskirts of the town I felt a peculiar sensation in the region of the heart and lungs, as if my chest had extended itself large enough to fill the whole compartment of the railway carriage, and yet there was no physical distension or sensation. It was as if an interior chest or thorax had expanded itself through the physical integuments and become much larger than the body. No definite thought was imprinted upon the intellect, which was quite free and serene; but deep within the consciousness I felt as if I could include all mankind in my grasp, and love and assist the meanest or the greatest of God's creatures as my tribute of duty to them. It was indeed a grand experience of universal sympathy, in which, no doubt, the brain as the seat of consciousness was involved; but the sensation attending it was not of the thought kind, but was located in that vital region encased by the ribs, and in which the great nerve centres of organic life are placed.

The question still presents itself—Is not this thoracic region the seat of solar (soul) experiences, of which as acts of consciousness the brain takes cognizance, but which are nevertheless related to a source quite outside of the province of the brain? Dr. Buchanan would be able to give useful suggestions on this question, which I will not anticipate. He states in his "Anthropology," that all parts of the body find their polar expression in the brain. No doubt this is so, and yet the index of soul-action may be found in the brain, without its source as a fountain of supply existing there also.

To return to my journey. After a few minutes this ecstatic sensation passed away, and I had a placid and most enjoyable trip past Mauchline, Catrine, across the Lugar, the Ayr, and down the ravine in which the winding Nith meanders towards Dumfries.

The Chief Monitor having observed his remarks, Mr. Rowley and others stated that they had observed similar experiences in their own life. It was necessary, however, to remember that this class of experience manifested itself in different degrees; sometimes partaking more of animal or sensual enjoyment, and at other times of a more interior and elevated feeling, inducing moral and religious considerations. In some cases it would partake of both, blended more or less harmoniously.

The subject is related most intimately to the Temperance question, All our appetites and habits having a close relation to the circumstances with which we surround the organic needs of the body.



In conclusion, it may be observed that a man may be immortal and yet have very little mind or very little soul. On the walls at the Spiritual Institution are two drawings brought from Germany by Signor Damiani. One of them represents "Frederick the Great," a man of superior mind, but of little soul. His appearance in spirit-life is represented as that of a muscular, determined-looking individual, with a large head, almost enveloped in shadows, the only light on him being down one side of the face and towards the neck. The other drawing represents "Solon," the law-giver; his face is luminous, and the head, of small harmonious type, is surrounded by a halo of light extending almost in a circle, the rays being longer in an upward direction than from the forehead down to the chin. "Solon" is the type of a spirit having soul; "Frederick the Great" that of one with very little soul, but with a great mind.

Some years ago Thomas Hazard published a book regarding communications from historical spirits, and it is there stated that men of great intellect were yet very little developed "spiritually." This distinction has been a source of difficulty to some readers, but it may be explained by the considerations presented above.

The brain of man may operate upon the resources of an external supply of the thought-principle derived from phenomena and practical contact with the world; or the phrenological faculties may become jets through which mental light burns, the supply to feed which is derived from a more divine and highly illuminating source. There can be no doubt of the fact that the brain is capable of producing nothing. It is an organ of exhaustion rather than of production. Physically it has to depend upon the products of the stomach and other organs of digestion, and may not its psychical supply also come from elaborations derived from the same region, more particularly from the products of the function of breathing? Thus the breath, as an ingress of imponderables into the half-animal, half-spiritual, laboratory, may mean "soul," as stated in Genesis, in a much more literal sense than external observers would at first warrant.

The thoughts thus hastily and cursorily presented cover a very important subject. First, as regards the component nature of man and the relations of brain and the nerves of organic life to the channel of divine inspiration and the source of thought; and secondly, it is important as indicating instructive considerations respecting the proper means of spirit-control and the best methods of development for spiritual purposes. There may be much error in the views now presented, and a candid criticism of them and unreserved statement of elucidatory thought is earnestly requested from all who have light to throw upon the subject.



## A BEAUTIFUL TEST OF SPIRIT PRESENCE,

THROUGH J. V. MANSFIELD.

(From the *Voice of Truth*.)

I have frequently publicly and privately said that Dr. Mansfield as a test medium of spirit-presence was very superior, and the example I am about to give will confirm beyond any kind of doubt the truth of my repeated declaration.

I was some time ago with Dr. Mansfield, consulting some of my spirit-friends, when the thought struck me that I would confer with one who in early life was one of my nearest and dearest friends. I accordingly wrote a question of quite a private nature to my spirit-friend, "Albert Fletcher," who has been in the spirit-world for over thirty years, and folding it up in several folds, I placed it, sealed with mucilage, before the medium, who immediately wrote as follows to me:—"Heaven bless you, my dear old friend and school-mate! *Years more than forty have elapsed since you and I would trudge away with our Latin books to the one-armed teacher, Alexander Kinmont.* How much I have followed you about since!—and yet you wist not that your friend Albert was near you. And yet, with these many years of separation, it seems but a week ago since we *talked about the matter of continuing the school together after Kinmont died.*—ALBERT FLETCHER."

A great deal more was written in answer to my particular question, but being of an entirely private nature, I will not give it to the public, though it was of much concern and consequence to me individually.

Now where was the great test? It is in what I have written of the answer, and particularly in those words in italics. More than forty years have elapsed since Albert Fletcher and I trudged together as school-mates and class-mates, with our Horace, Virgil, and Bacon's "Novum Organum" under our arms, in the busy streets of Cincinnati, to the school-house of the great classical teacher, Alexander Kinmont, who had but one arm, and that his left one—having been deprived of his right arm in early life in Scotland. And again, most important—our great teacher died in the year 1838, and I continued his school for a time after his death; and it was then that Albert Fletcher and I did talk, over and over again, "about that matter of continuing the school;" and we formed our plans;—I was to be the classical teacher, while Albert was to take charge of the mathematical and English department; and we already had all the pupils of the seminary on hand, and the plan would have been executed, had it not been for the opposition of Albert's father.

Now, these facts were never known in any sense to the medium, and only known to Albert and myself! Who, then, in God's name, was there and then talking to me, *but my old and dear friend Albert? It was he, and could be no one else! his spirit!—Voice of angels.*



## HUMAN IMPERSONALITY.

BY EPES SARGENT.

Do those critics who reject the notion of a divine personality ever trouble themselves with the question, whether a perfect personality can be predicated of man himself? It is hardly necessary for us here to go into the etymological history of the word *person*; but we will glance at it in passing.

*Personal* in Latin (from *per*, through, and *sonare*, to sound) meant the mask worn by an actor on the ancient stage, within which the sounds of the voice were concentrated, and through which he made himself heard by the immense audience. From being applied to the mask it came next to be applied to the actor, then to the character acted, then to any individual of the human race, and then, according to the definition of Locke, to "a thinking, intelligent being that has reason and reflection, and can consider itself as itself, the same thinking being in different times and places."

This definition is too limited. More in harmony with modern thought is that which defines personality as having for its elements, (1) existence, (2) consciousness of existence, (3) control over the manifestations of existence. Under this last comprehensive definition we justify our conceptions of the divine personality.

Applying this higher definition to the case of man, how imperfectly appears his personality, looked at in its strictly normal exercise and relations. Of many of the processes of his physical and psychical being, he is wholly unconscious; nay, he may be often unconscious of his own existence. Only partially has he the manifestations of existence under his control. The voluntary and involuntary muscles in man, his conscious and his automatic actions, show what a mere fragment of actual personality he has in his normal state. Even when he is at his highest, and trying to take cognizance of his own thoughts—when he would be at once subject and object—how hard it is for him to so far abstract the conscious from the unconscious elements of his nature as to recognise with clearness the dividing line! Man is therefore largely impersonal, and it is only in a limited sense that he can be said to have personality.

Only that Being whose cause of existence is within himself—who exists necessarily, and not contingently—who has the manifestations of his existence under his own control—can be said to have personality in the highest sense. And even He—having the manifestations of his existence under his own control—may voluntarily sink into impersonality in some of those manifestations. He may be, of his own volition, impersonal in the on-goings of nature. He may have what Schelling calls "a limiting and denying energy" by which his full personality is kept in reserve. Like man He may have distinct states of consciousness. Immanent in nature, He may be above and beyond nature, free and transcendent, just as we conceive of the spirit of man as transcending his physical and corporeal limitations.

To say, therefore, that the divine personality is an "absurdity," is



to have but a narrow conception of a Being infinite in the highest sense, and free from all infirmity and imperfection. He may be not only personal and super-personal, but impersonal also in some of his manifestations. The infinity of his nature may take in more phases of manifestation and of activity than it is possible for us to conceive. He may stoop to hear the prayer of a little child, even though the child's conception of him be anthropomorphic and confused. He may give beauty to a flower. He may be able to cause the universe to roll up like a scroll, and vanish into the invisibility whence it came forth.

Even atheists admit that a will and an intelligence are manifest in the operations of nature; but that will and intelligence, as here displayed, may be merely a partial—possibly an unconscious—manifestation of that supreme conscious power, infinite, personal, and omniscient, which we call God; for God in the highest may be personal, while God, in lower manifestations of his being, may be impersonal. Thus may the theistic and the pantheistic theories be harmonised; distinct, and yet one, like the convex and concave of the same curve. The conception does not lack analogy with what the psychology of Spiritualism reveals to us of the distinct state of consciousness in man.—*Religio-Philosophical Journal*, April 20, 1878.

---

### HEALTH AND EDUCATION.

In these days health and education are not going hand in hand. The first serious and increasing evil bearing on education and its relation to health is the too early subjection of pupils to study. "The present modes of education," say Dr. Richardson, "are not compatible with healthy life." Children are often taught lessons from books, before they are properly taught to walk, or properly taught to play. Play is held out to them, not as a natural thing, as something which a parent should feel it a duty to encourage, but as a reward for so much work done, and as a rest from work done; as though play were not itself a form of work, a form of work which a child likes while he dislikes another form because it is unfitted to his powers. For children under seven years of age all teaching should be through play. Through play letters and languages can be taught, animal life can be classified, and the surface of the earth made clear, and history can be told as a story. Under such a system the child grows into knowledge, learns well, eats, sleeps, and plays well, and acquires the habit of happiness. "To put a horse in harness, and make it work hard while growing," scornfully said the Doctor, "is acknowledged to be cruel and ignorant, but to make a growing child work hard is thought a mark of vigilance." In the past year four victims of over-work have been under his care. In one, absence of memory had resulted; in another sleeplessness, and that exhaustion which leads almost to delirious wandering. Here failure caused deep depression. In the third case sleeplessness, labour, and excitement brought on an hereditary tendency to intermittency of the action of the heart.—*Herald of Health*.



## AMUSEMENT AND PLEASURE FOR AN INVALID.

If lovers of flowers only knew how easily the fragrant white water lily could be cultivated, we are quite sure these lilies would be grown far more than other less fragrant and beautiful flowers that take more time and trouble to cultivate. These lilies once planted in a pond or small stream, that does not entirely dry up in summer, will need no further care, and will increase from year to year. They bloom most profusely in shallow water. People who have not the facilities for growing them in ponds and streams, can have their lily gardens in tubs and aquariums, where they can admire and gather the most fragrant and beautiful flower that grows on land or water. For a tub, take a strong barrel, free from tar, oil, or salt, saw it in two, fill this one-third full with fine black garden soil, or meadow mud; plant the roots in this, covering them two inches deep, and water gently so as not to disturb the roots until the tub is full. Always keep the tub full of water, and this is the only care needed. The tubs should be placed in a cellar during the winter, kept from frost, and not allowed entirely to dry up. For aquariums, put in five inches of fine black loam, cover the roots one inch deep in this, and sift on fine sand enough to entirely cover the loam. For ponds and streams, tie a stone close to the roots, large enough to sink them, and drop them in where you wish them to grow.

B. MANN.

---

PROFESSOR BUCHANAN ON PSYCHOLOGICAL STUDY.—In judging of the practical value of a steam-engine, the opinion of one experienced mechanic is worth that of a myriad of speculative philosophers and *littérateurs*. So in reference to psychic science, the only opinions of much value are those of *experts*. Scientists in other departments, reviewers and critics are entitled to some respect also; merely, however, as a portion of the great public, who, with little knowledge of art, express their appreciation of great pictures, and, with still less knowledge of medicine and surgery, express in patronage their opinions of physicians and surgeons, and often very erroneously.

When the reality and grandeur of the psychic sciences, as the highest departments of human knowledge, are more generally understood, we shall have no longer to encounter the pragmatic interference and shallow opinions of those who are unfamiliar with the most important psychic phenomena, and whose tactics lead them to try to suppress inconvenient facts by assailing their witnesses with personal misrepresentation.—*Extract from Preface to "The Psycho-Physiological Sciences."*

---



## Poetry.

## SEASIDE SCENES AND REFLECTIONS.

I stood upon the shore  
 To list to ocean's roar,  
     So hoarse and hollow;  
 Wild billows tossed the spray,  
 While many a mad array  
     Did fiercely follow.

A whirlwind tore the lea,  
 Low bowed the giant tree,  
     Its power owning;  
 It shrieked along the main,—  
 Anon 'twas heard again  
     In fitful moaning.

Cimmerian darkness came,  
 Relieved but by the flame  
     Of lightning flashing;  
 The thunder shook the ground  
 While rivalling the sound  
     Of breakers dashing.

Huge chilling drops of rain  
 Dashed rudely o'er the plain  
     And o'er the mountain;  
 And o'er the surging deep  
 The storm did swiftly sweep  
     Back to its fountain.

The tempest rolled away,  
 And ocean trembling lay,  
     Now softly sighing;  
 The air was scarcely stirred,  
 The struggling storm was heard  
     In distance dying.

Thought I, this scene of strife  
 Resembles human life—  
     Its deep emotions;  
 Tumultuous hopes and fears  
 And floods of briny tears  
     O'erwhelm like oceans.

A cherished wish attained,  
 A darling object gained,  
     And passion ceases;  
 When like a sea from sleep  
 Its billows higher leap  
     Till death releases.

Peckham, May 11, 1878.

JAMES LEWIS.



## THE HEART OF MAN.

*(From the German of GEORGE PHILIPP SCHMIDT.)*

In all Nature's boundless empire,  
 Fairest pearl that she can boast;  
 Of the stars her robe encircling,  
 Brightest gem of all the host.  
 Of all marvels most surpassing,  
 Masterpiece in time and space;  
 To the heart inspired with passion,  
 Rapt in ecstasy's embrace.  
 I have known in happy seasons  
 When the realms of sea and land  
 Seemed all subject to my finger,  
 Mighty as the Maker's hand.  
 Tell me not of other wonders—  
 Suns in numbers that appal—  
 Circling through the vault of heaven;  
 Greater is the heart than all.  
 Orbs, they say, that o'er us cluster,  
 Are the mansions of the blest:  
 Blest above all other heavens  
 Is the heaven within the breast.  
 Tell me not of suffering's furnace,  
 For I mock at want and pain;  
 From each vein the life-blood flowing,  
 Yet o'er death the heart shall reign.  
 When the weight of passing moments  
 Lays the sparkling fountain low,  
 And in dark and chilling valley  
 Slowly doth the current flow.  
 If the rose must lose its beauty,—  
 Moonbeams gleam on leaves all sere;  
 If forget-me-not forsaken  
 Shed in dew its parting tear;  
 If, when Autumn's self has vanished,  
 Angels shall the garden close,  
 What remains to us of Eden?—  
 'Tis the heart in its repose.

S. E. BENGOUGH.

## FROM THE GERMAN OF HEINE.

Thou'rt like unto a flower,  
 So chaste and sweet and fair;  
 I look on thee, and sorrow  
 Doth fill my heart with care.  
 Meseems as if my hands should  
 Upon thy head be placed,  
 Praying that God maintain thee  
 So fair and sweet and chaste.

A. T. S.



PROGRESSIVE LIBRARY & SPIRITUAL INSTITUTION,  
15, SOUTHAMPTON ROW. LONDON, W.C.

WORKS ON

## Spiritualism, Mesmerism, Phrenology, &c.

PUBLISHED, IMPORTED, AND SOLD BY

JAMES BURNS, 15, SOUTHAMPTON ROW, LONDON, W.C.

### Scientific Works on Spiritualism.

## ON MIRACLES AND MODERN SPIRITUALISM.

THREE ESSAYS.

By ALFRED RUSSEL WALLACE, F.R.S.,

Author of "The Malay Archipelago," "Contributions to the Theory of Natural Selection," &c.

*Cloth, 5s. Presentation Edition, Gilt, 7s. 6d.*

#### CONTENTS.

- |   |   |
|---|---|
| <p>I. AN ANSWER TO THE ARGUMENTS OF HUME, LECKY, AND OTHERS AGAINST MIRACLES.</p> <p>II. THE SCIENTIFIC ASPECT OF THE SUPERNATURAL.</p> <p>1. Introductory.</p> <p>2. Miracles and Modern Science.</p> <p>3. Modern Miracles viewed as Natural Phenomena.</p> <p>4. Od-Force, Animal Magnetism, and Clairvoyance.</p> <p>5. The Evidence of the Reality of Apparitions.</p> | <p>6. Modern Spiritualism: Evidence of Men of Science.</p> <p>7. Evidence of Literary and Professional Men to the facts of Modern Spiritualism.</p> <p>8. The Theory of Spiritualism.</p> <p>9. The Moral Teachings of Spiritualism.</p> <p>10. Notes of Personal Evidence.</p> <p>III. A DEFENCE OF SPIRITUALISM. From the <i>Fortnightly Review</i>, Revised and Enlarged.</p> <p>APPENDIX.</p> |
|---|---|

## Researches in the Phenomena of Spiritualism.

By WILLIAM CROOKES, F.R.S.

(Reprinted from the *Quarterly Journal of Science*.)

*Price 5s. in handsome Cloth,*

Seven Illustrations of Appliances for the scientific demonstration of the genuineness of the phenomena, including Portrait of Mr. D. D. Home holding the accordion under the hand which it was being played on by the agency.

#### CONTENTS.

- |  |   |
|--|---|
| <p>Spiritualism viewed in the Light of Modern Science.</p> <p>1. Preliminary Investigation of a New Force.</p> <p>2. Further Experiments on Psychic Force.</p> <p>3. Dependence upon Dr. Carpenter's asserted Recognition of Mr. W. Crookes's Experimental Evidence of the Existence of a New Force.</p> | <p>4. Psychic Force and Modern Spiritualism.</p> <p>5. Notes of an Inquiry into the Phenomena called Spiritual during the Years 1870-73.</p> <p>6. Miss Florence Cook's Mediumship.</p> <p>7. Spirit-Forms.</p> <p>8. The Last of Katie King: the Photographing of Katie King by the aid of the Electric Light.</p> |
|--|---|

## THE ARCANUM OF SPIRITUALISM: MANUAL OF SPIRITUAL SCIENCE AND PHILOSOPHY.

By HUDSON TUTTLE.

450 pp. Cloth, 5s.

This comprehensive Work traces the Evolution of the Phenomena from the various kingdoms of nature and shows their relations thereto. Those who would understand Spiritualism should read this thoughtful work.

SPIRITUALISM. By GERALD MASSEY. 2s



## PURE SOLIDIFIED CACAO

Is a preparation of the fruit of the *Theobroma Cacao* by a peculiar process by which all the natural properties of the fruit are retained in an unimpaired state, without the addition of any foreign substance. The BUTTER OF THE CACAO BEAN, so nutritious and promotive of easy digestion, is all retained in the SOLIDIFIED CACAO, and as no starch, arrowroot, sugar, fat, or other article is introduced to make weight, this Pure Article is agreeable to and digestible by delicate constitutions to which the various articles of commerce known as "Cocoa," "Chocolat," &c., are heavy, obnoxious, and indigestible.

### The Manufacturer DEFIES Science to DETECT ADULTERATION in the SOLIDIFIED CACAO.

By no process of abstraction or addition is the beautiful product of Nature, named by Linnaeus *Theobroma* (food fit for Gods), tampered with. It is the only article of the kind which can boast of the same qualities. By a method of manufacture which develops all the properties of the tropical bean, the article is presented to the consumer in a condition of absolute perfection. The flavour is exquisite, and so abundant that one pound of SOLIDIFIED CACAO will go further than many times the quantity of low-priced preparations, rendering it THE CHEAPEST (as well as the best) ARTICLE IN THE MARKET. Besides being an excellent corrective of the stomach and an aid to digestion,

## SOLIDIFIED CACAO

### IS A MOST NUTRITIOUS ARTICLE OF DIET,

containing as it does all the elements contributed by nature in its growth, and chemically supplying all that goes to make up a perfect organism. This cannot be said of Tea, Coffee, or any other article used as a drink. SOLIDIFIED CACAO is not a stimulant—does not excite the nerves or heat the blood. It does not occasion or intensify chronic ailments, and is therefore food of the highest class, and is therefore peculiarly adapted to the

### USE OF MEDIUMS AND SENSITIVES,

and is the best refreshment after a seance or public speaking. Invaluable to invalids requiring a highly-concentrated diet.

The SOLIDIFIED CACAO is adapted for universal use in cases of tea, coffee, wines, spirits, malt-liquors, and other costly beverages are frequent, which often become the bases of tyrannous habits and the cause much suffering.

By the use of SOLIDIFIED CACAO money may be saved, strength maintained, health restored, bad habits prevented, appetit pleasure enjoyed and the manifold purposes of life carried out with more effect.

### TRY IT, AND YOU WILL USE NO OTHER.

Price 5s. per lb. Sold in packets of 1 lb. each. By sending for a quarter at a time it will be sent carriage paid, preventing the necessity for additional profits, and the risk of adulteration. When properly kept, is preserved for years without deterioration.

Agent: J. BURNS, 15, Southampton Row, London.